DOCUMENT RESUME

ED 247 919 IR 011 269

AUTHOR Green, Alan
TITLE Communicating in the '80s. New Options for the Nonprofit Community.
INSTITUTION Benton Foundation, Washington, DC.
PUB DATE [83]
NOTE 67p.; Photographs may not reproduce.
AVAILABLE FROM Benton Foundation, 1776 K Street NW, Washington, DC 20006 ($3.00 per copy; $2.00 each for ten or more copies).
PUB TYPE Guides - Non-Classroom Use (055) -- Reports - Descriptive (141)

EDRS PRICE MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS Administration; Advocacy; *Delivery Systems; Fund Raising; *Microcomputers; *Nonprofit Organizations; Professional Development; *Public Education; *Public Relations; Research; *Telecommunications; Training
IDENTIFIERS Instructional Television Fixed System; Interactive Video

ABSTRACT

This booklet includes descriptions of new communications technologies and case studies of how they can be used in planning for appropriate and effective use of technology to enhance service to the public. Single-page overviews of satellites, broadcasting, videotex, cable television, microcomputers, teleconferencing, personal video, and telephones are provided. Individual chapters provide details on how public service organizations have used these technologies in fund raising, publicity and media relations, public education, consensus building and advocacy, research and dissemination, training and professional development, delivery of services, and management and administration. Brief case studies summarize a variety of projects developed by such organizations as school districts, the People for the American Way, United Methodist Communications, the Domestic Policy Association, the League of Women Voters, the American Business Network, the United States Chamber of Commerce, the American Enterprise Institute, and the AFL-CIO. A resource list includes 19 organizations, 16 books, and 8 periodicals. (LMM)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

This document has been reproduced as received from the person or organization originating it.

Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

PERMISSION TO REPRODUCE THIS MATERIAL IN MICROFICHE ONLY HAS BEEN GRANTED BY

Carolyn Sachs

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

ED247919

IR011269

On the cover: In Manhattan, the Alternate Media Center at New York University's Tisch School of the Arts produces an electronic text service delivered to viewers on Manhattan Cable. This page from the community information service was made by graphic artist Francois Roux on an Apple II Plus microcomputer.

COMMUNICATING IN THE '80s

New Options for the Nonprofit Community

by Alan Green

IR 011269

A publication of The Benton Foundation
Washington, D.C.

Foreword

The information revolution is upon us, and often it can seem confusing or even threatening. Cable television, fiber optics, uplinks, downlinks, computer mailboxes, videodiscs—the terminology alone can cause us to run for cover. But, in truth, there is no need to hide. These new communication and information tools can help us to work more effectively and efficiently—to improve the way we manage and move information. And the management and movement of information is, after all, what most nonprofit organizations are all about.

Think about it for a moment. Regardless of what our organizational goals may be, how do we spend most of our time? Research, fund-raising, meetings, public education, advocacy, training: all of these functions involve the transfer of information, and all of them can be enhanced by the appropriate use of new technologies.

In adapting to the changes brought by technology, however, we face several obstacles. First, all institutions resist change. Accustomed to old ways of operating, we postpone dealing with the new. Second, we need to learn how to use the emerging tools of communication. Now that we have mastered the telephone and the electric typewriter, we can go on to the microcomputer and the video recorder. We must understand that today, more than ever, the media are the "magnifiers" of our concerns—of the issues we care about. It seems that our children are far ahead of us in this regard.

Finally, the costs of using new technologies have been perceived as beyond our reach. Fortunately, this is now changing. In fact, the use of new communication techniques may become essential as the costs of traditional methods increase. For example, as travel becomes more expensive, meeting via teleconference seems an increasingly attractive alternative. Even plain old mail service eventually may be too expensive. Analysts predict that by 1990, the price of a first-class stamp may rise to 80 cents or more. New opportunities for presenting the views of the nonprofit community are becoming available, and we should look for ways to pool resources so we can take advantage of them.

This is not to underestimate cost as a lingering barrier to using new technology. Any nonprofit group contemplating the purchase of even a small word processor knows that the investment can be significant. Like our for-profit counterparts, however, we have to weigh the immediate expenditure against the long-term costs and benefits. Here, planning is the key. Once you have a general sense of the possibilities of the new technology, the place to begin planning is at your office. Hard questions should be asked. How do we communicate with our various constituencies and the public? How much and what kinds of information do we handle? How much time and money do we spend on the telephone and in meetings? What costs could be reduced or offset by use of a different method of acquiring or moving information? How can these technologies help us to do a better job by freeing up time to work with the people who need our help face-to-face?

Consideration of these kinds of questions will lead toward planning the appropriate and cost-effective use of technology to enhance our service to the public. This booklet, which includes descriptions of the new technologies and case studies of how they can be used, should help to put some of the answers in focus.

Charles Benton
President
Benton Foundation

The Benton Foundation is a private grantmaking institution committed to enhancing public understanding and use of traditional and emerging media of communications. The Foundation seeks to examine the major issues raised by the rapid growth of communications technologies, and to encourage the development of communications policies and systems consistent with the democratic principles on which our nation is based.

Design: JEP Graphics
Illustrations: Gil Mead
© 1983 The Benton Foundation

CONTENTS

6 Introduction

10 CHAPTER ONE
Fund-raising

16 CHAPTER TWO
Publicity & Media Relations

22 CHAPTER THREE
Public Education

32 CHAPTER FOUR
Consensus Building & Advocacy

38 CHAPTER FIVE
Research & Dissemination

44 CHAPTER SIX
Training & Professional Development

50 CHAPTER SEVEN
Delivery of Services

56 CHAPTER EIGHT
Management & Administration

63 Resources

IN FOCUS

Satellites	15	Microcomputers	43
Broadcasting	21	Teleconferencing	49
Videotex	31	Personal Video	55
Cable TV	37	Telephones	61

Introduction

In the fall of 1980, those looking for evidence of new trends in communications need not have looked any further than the prairie town of Eagle Bend, Minnesota, population 550. Until the day that Channel 45 signed on, the residents of this farming community, whose project had been written off in many quarters as only wishful thinking, could receive the signals of three radio stations, one VHF TV station, and, to some extent, three UHF TV stations—all of which were located in other towns. In fact, until Channel 45 went on the air, the only local news medium in Eagle Bend was a weekly newspaper.

But after a year and a half of planning, aided by grant money from both the state of Minnesota and the federal government, as well as private foundations, Eagle Bend had an experimental low power television station up and running that would radically change the face of its educational system. Independent School District 790, which, because of its rural location, did not have access to as wide a variety of courses as administrators would have liked, suddenly was hooked up to classrooms in two surrounding towns. Using a combination of technologies, the students in the three neighboring communities could sit in on—indeed, participate in, through an interactive transmission system—classes in the other schools. And interested parents could watch it all at home on television.

Of course Eagle Bend has not been alone on the front lines of this communications revolution. In Reading, Pennsylvania, the nonprofit Berks Community Television has been producing interactive cable TV programming, giving the population direct access to public officials; in Tacoma, Washington, the local community college offers for-credit courses, along with audio tapes of interest to the community in general, via a Touch-Tone-accessed system; in the Washington, D.C. area, a local amateur radio club, aided by federal funds, developed a computer messaging system for the deaf and a clearinghouse of information on the use of technology for the handicapped; in Port Washington, New York, the public library has been using video to create historical archives chronicling local history.

It has been just that sort of transition: a low-key, almost surreptitious insurrection that has spawned a variety of innovations in communication. And this movement, which quietly toppled a long line of technological traditions, continues today. It has given rise to low power television and high definition video, satellites that broadcast directly to your home and interactive videodiscs. It has brought into being audio, video, and computer conferencing, wireless telephone systems and multi-channel pay TV. But it also has meant the discovery of ancillary and innovative uses for the technologies that have served as the basis of our traditional systems of communication.

The evolutionary process was, for many years, characterized by separate delivery systems developing along different courses. There were, of course, the wires—telegraph, telephone, and, much later, cable TV—that connected the land from point to point. And there were the over-the-air technologies—the "wireless," for example, used for such purposes as ship-to-shore communication, and eventually radio, television, and communications satellites that linked multiple points to a single information source.

Although there were demonstrations of radio around the turn of the century, broadcasting as we know it did not have its beginnings until 1921. AM radio, known also as "standard broadcasting," was an immediate success. It was so successful, in fact, that by 1925 the government, hoping to somehow reduce the interference caused by so many stations, considered asking for limitations on broadcast time and power.

That same year, there were nearly 17 million telephones in the United States, six-and-a-half million more than there had been a decade earlier, and 13 million more than there had been in 1905. With this transcontinental telephone network in place, radio broadcasters had an opportunity to augment their local service. In 1926, RCA's National Broadcasting Company formed the first regular network, joining 24 radio stations via telephone lines for the simultaneous transmission of programming. Broadcasting and the wire, which had been running parallel courses, crossed for the first time.

But this commingling by no means established a pattern: the junctures at which these forms of communication converged remained few, their development, instead, taking separate tracks in terms of both purpose and regulation. Unlike the telephone, for example, which is regulated as a "common carrier," broadcasting was designed as a mass medium, its end products entertainment and information.

The radio spectrum is the range of frequencies that can be used to transmit electronic signals. Because the number of channels in the spectrum that can be used for broadcasting is limited, broadcasters were required to be licensed by the federal government, which oversees management of this resource. For the most part, technological breakthroughs were in the area of increasing the number of channels that could be squeezed into the usable part of the spectrum.

In 1940, following years of experimentation, the Federal Communications Commission authorized the operation of FM radio. Under the original plan, FM was to occupy 40 channels—five of which were reserved for noncommercial educational service. Later, the FCC moved FM to another part of the radio spectrum—increasing the number of channels to 100 in the process, 20 of which were set aside for educational use. At the same time, AM radio was experiencing considerable growth, and with this expansion came a variety of program formats: big band, comedy, sports, and news, for example. In fact, as World War II commanded the nation's attention, radio became the primary ongoing source of news.

Television had a somewhat similar history. Originally authorized by the FCC to begin service in July 1942, the Commission allocated 13 VHF (very high frequency) channels for commercial television. Six years later, one of those channels was assigned to land mobile radio, a point-to-point broadcast service. And then, in 1952, the FCC allocated 70 UHF (ultra high frequency) channels for television use; it also adopted a table making more than 2,000 channel assignments to approximately 1,300 communities, 242 of which were designated for noncommercial educational use. (In 1966, a revised table of channel assignments designated more than 600 spots for educational TV.)

And while television and radio increased their reach, other technologies came into their own, as well. In 1947, a microwave relay service was established to link cities in the Northeast for the transmission of TV signals; four years later, a transcontinental system was in place. Instructional Television Fixed Service (ITFS), a microwave service that simultaneously allows the transmission of as many as four programs in one area, was established for educational and nonprofit organizations in 1963. Broadcast relay and networking by satellite followed soon after; over-the-air pay TV was added to the growing menu of services in December 1968.

And so it went. The development of new over-the-air services continued, while the development of the wire ran its own course.

As the 1940s drew to a close, there were more than 43 million telephones in the nation, as the wire wound its way toward the near-universal service we have today. Unlike

broadcasters, who competed for revenues, telephone companies were licensed as common carriers, operating with exclusive franchises under government supervision and with their rates regulated. Although independent phone companies existed, AT&T, with its 22 local companies and long-distance network, provided the major portion of the nation's phone service. It had, in effect, a government-granted monopoly, in return for which it was required to provide service to all customers without discrimination.

In 1949, a hybrid service emerged—cable television. Originally, cable was intended as nothing more than a method of improving reception: it was called community antenna television (CATV), because a single master antenna, located in a strategic geographical position, captured local TV signals and brought them via wire to homes that were otherwise unable to tune in these signals clearly.

As the medium grew, cable system operators began bringing in distant TV signals by terrestrial microwave. Elaborate microwave relay systems, which relayed the signals from town to town, were used to form regional networks. These allowed cable operators to import the signals of TV stations hundreds of miles away and distribute them by coaxial cable to their subscribers. As its service capabilities expanded, cable, once exclusively a rural phenomenon, crept steadily toward the cities.

In 1975, we witnessed an event that in many ways changed the shape of the communications landscape. That year, Time Inc. leased a transponder on RCA's Satcom I satellite to deliver first-run movies to cable systems nationwide. What followed was a brief pause, and then a mad rush to the skies, as programmers, offering everything from movies and sports to religious fare and Congressional coverage, looked to grab a share of the ever-expanding cable population.

Satellites, it was quickly discovered, make very good sense: they can reach a very large coverage area, with multiple channels, and topographical factors have little impact on reception. All that is required to receive signals off the "bird" is a receive-only earth station, and these dish-shaped antennas soon began sprouting, first, at cable systems all over the country, and then at radio and television stations, news organization bureaus, and even in backyards.

As the decade pushed its way into the '80s, there were other key factors that contributed to the reordering of our systems of communication. Video, for example, for years the tool of the television industry, had become an affordable option for libraries, universities, organizations, and even individuals. Warner-Amex gave Columbus, Ohio, and the rest of the nation, the first look at the options provided by two-way interactive cable. For the first time, the phone company had competition in the provision of long-distance service. MCI, using satellites, microwave relay systems, and the established telephone network, which by 1980 accounted for more than 180 million phones in 98 percent of American homes, would begin to reduce long-distance telephone rates. There were teletext and videotext demonstrations, audio and video "teleconferences," on going tests of a mobile communications system, and the prospect of low power television, which could mean thousands of new over-the-air TV outlets.

And of course there was the microcomputer. The powerful calculator, which proved a boon to routine office tasks like bookkeeping and filing, opened up entirely new avenues, as well. Computer conferencing, electronic mail, "on-line" bulletin boards, and access to a variety of data bases, in some cases with terminals costing as little as $300, became practical options.

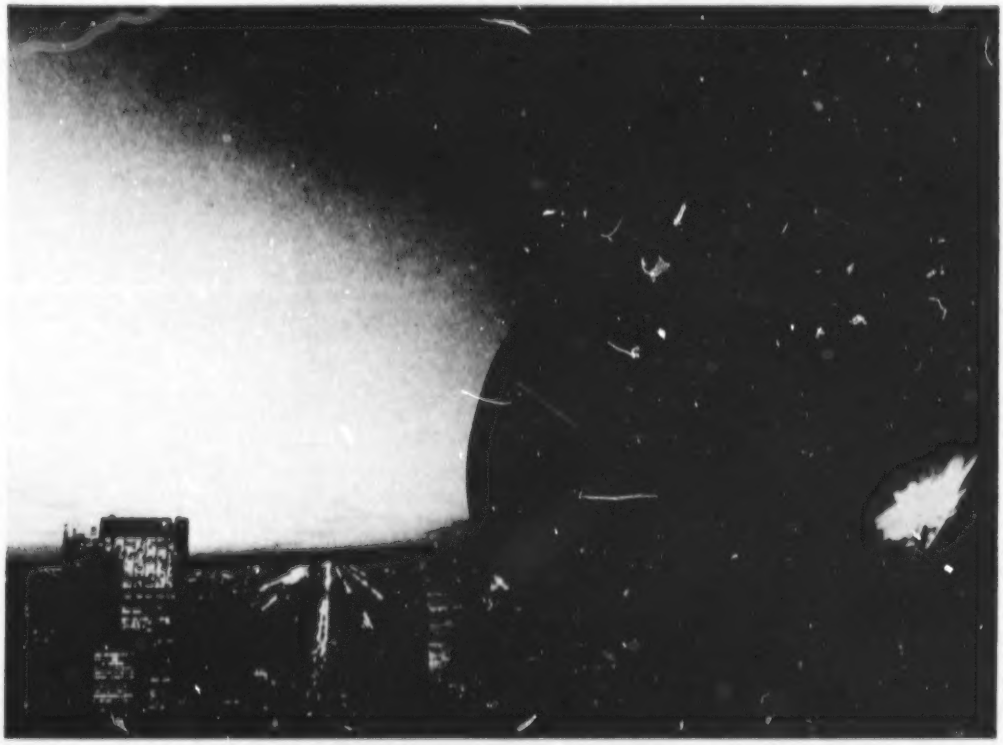
In many ways, though, our notions of "communication" continue to be bound by the old limitations of the individual media. Most of us still look at what each distinct technology has to offer and then develop our communication strategies to fit. Public service announcements, for example, are sent by mail to broadcasters, who may or may not air them. We waste precious time playing "telephone tag." We hold press conferences in hopes of attracting the attention of the news media. In short, our perceptions of the

options have remained very limited. Only gradually are we beginning to understand that we can decide on our communication goals in advance and then put together the technological pieces—often, dissimilar pieces—to accomplish our purposes much more effectively.

By mixing and matching technologies, almost anything has become possible. Computers and videodiscs can be combined to create an ideal interactive educational tool; ad hoc networks can be formed, sometimes with as little as a week's notice, for multi-site video conferences; videotape and computer-based newsletters have been tested as replacements for the paper versions; financial institutions are using unused portions of FM signals to send streams of data; plans have emerged to use ITFS microwave channels and computers in concert for educational purposes; students in foreign countries can be linked via satellite with American students as a cultural exchange program; community announcements are being sent from terminals in the offices of local public service agencies to a central computer, where they are reformatted for display on the local cable system.

Thus, while the old guard sat waiting for the revolution to begin, small bands of insurgents quietly were dismantling the palace walls. Their work—the innovative uses of old and new technologies, used separately or in any number of combinations—undoubtedly can serve as models for others. In many cases, the patterns will have to be modified, and some parts of the puzzle will have to be exchanged for others. But being aware of the options, and understanding that the technology need not dictate what may be accomplished, may very well translate into better solutions to existing problems. There are, in effect, few remaining boundaries, as the projects detailed here demonstrate.

"Everyone told us we couldn't accomplish this," says Richard Lundgren, principal of the Eagle Bend School. "We didn't believe them."



CHAPTER

1

Fund-raising

The voice on your phone says: "Hello, please hold for the Chairman of the Democratic Party."

The Chairman, calling me? The voice that follows says: "Hello, I'm Charles Manatt. I'm calling to thank you for your generous support to the Democratic Party this past year. Thanks to you we've made important gains. I'm just sorry that I can't be speaking with you personally. But this new automated system makes your contributions go farther and work harder."

You knew there had to be a catch. After all, the Chairman of a major political party doesn't have time to say thanks for every $10 contribution. In this case, the recorded message brought word of a letter that would be arriving describing the Democrats' position on Social Security. "I urge you to watch for my letter, read it carefully, and continue your support," it continued. "With your help, we'll keep Social Security strong and fair. Thank you, again. Goodbye."

There may be nothing like the personal touch, but there's also something to be said for speed—particularly if you're trying to reach a large constituency on a fund-raising matter. For years, many organizations relied almost exclusively on direct-mail for fund-raising efforts. Recently, sophisticated computers that permit better targeting of potential contributors have made these efforts more successful. But in some quarters, direct-mail solicitation is giving way to such options as incoming toll-free "800" numbers, which have been a valuable tool for increasing membership, and computer-operated telephone systems. Sometimes these automated tape message (ATM) systems are used alone, and sometimes in concert with direct-mail to notify people of a soon-to-arrive letter.

ATM systems combine computer technology with standard telephones, permitting nonstop calls to selected—or random—telephone numbers. ATM can dial hundreds of phone numbers in an hour and play a recorded message. Some have interactive capabilities, so if a person wants to talk to another person, rather than just listen to a recording, dialing one number will alert someone to get on the phone.

ATM systems can cost upwards of $100,000, but an organization need not actually purchase the hardware. There are companies that, using an organization's list of phone numbers, will implement an ATM campaign. Cost for this service can be as little as 60 cents per completed call; operators doing the same work typically would cost more than three times that amount.

TV and radio commercials have long been used as a fund-raising tool by larger nonprofit organizations, but most smaller groups have been dissuaded by the cost. However, Frank Colangelo, whose organization, Vanguard Communications, plans media campaigns for nonprofit groups, says many organizations incorrectly assume that television is too expensive for their budget. A good negotiator, he says, can buy television time at relatively low cost, and often in the "right" markets. But even those using television, he adds, often underesti-

mate its effectiveness. For example, it may cost an organization $100 to buy time for a TV spot, and the return may be only $50. But that doesn't necessarily make it a losing proposition, he says: membership rolls may have five new names, which will translate into a net, long-term gain for the group.

Some groups also have begun looking into running fund-raising spots on cable TV, but cable, for the most part, remains unexplored territory. That may soon change, however. Some media experts believe cable television can be a terrific fund-raising vehicle. Colangelo, for example, says tests show that cable may be more effective than broadcasting. Some data, he says, show that fund-raising spots on broadcast television result in more viewers responding in absolute numbers, but a larger *percentage* of the cable audience responds. Cable, he notes, has a good "upscale" audience that could make it a terrific fund-raising vehicle when it is more available in urban areas.

One of the most ambitious projects of this sort, using a combination of over-the-air television, cable, and telephones, was undertaken in 1982 by People for the American Way. People For, a national nonprofit organization born in 1980, includes television producer Norman Lear among its founders. One of its main objectives is public education on Constitutional freedoms, and its efforts in this regard have included a series of television commercials and public service announcements, and a two-hour special called *I Love Liberty*, which aired nationally on network TV in March 1982.

In the spring of 1982, the organization decided to produce a half-hour documentary on the "radical right." What later would be titled *Life & Liberty...For All Who Believe* would be targeted for broadcast in at least 40 cities the following fall. The primary purpose of the project was public education—an opportunity to inform the general public about an issue. As production moved along, however, it was decided that *Life & Liberty* also could be a viable membership recruitment vehicle and direct-response advertising tool. To attract contributions, viewers were asked to call a toll-free "800" at the end of the film.

Production of the documentary took months, with a crew crisscrossing the country filming interviews and events (a book burning, a teacher censorship hearing, an anti-ERA dinner). Burt Lancaster hosted the show, the "800" number and post office box number for mailing contributions were inserted at the end of the film, and its contents were reviewed by People

For years, many organizations relied almost exclusively on direct-mail for fund-raising efforts. Recently, sophisticated computers that permit better targeting of potential contributors have made these efforts more successful.

For board members. The logistics of distribution then had to be dealt with.

Before filming had actually started, People For hired a reputable TV time buyer capable of placing the program in cities that the organization most wanted to reach. This, of course, is crucial: broadcasters are wary of potential fairness doctrine complaints and law suits. To assuage fears, the proper releases were secured, the program was reviewed by five attorneys, insurance coverage was secured, and licensing agreements were signed with each station carrying the documentary.

The next step was to hire a firm to handle the telephone response—a key facet of the process. Using one's own staff is less desirable, because few groups are equipped to handle a large volume of calls or effectively carry out the follow-up procedures. The firm People For finally selected was capable of handling 5,500 calls per hour. Beyond that, the Nebraska-based company could handle credit-card pledges, pledge fulfillment letters, and daily media tracking.

The remaining considerations were promotion of the film and raising enough funds to carry out the project. Preliminary analysis shows that total expenditures exceeded $525,000. This included roughly $190,000 to produce the film, $220,000 to buy air time, $28,000 for telephone response services, $28,000 in insurance fees, $50,000 for promotion, and $12,000 for odds and ends. The promotion strategy included advertising in forty newspapers and four regional editions of *TV Guide*, extensive press efforts, a membership appeal, constituency contacts, and promotional spots sent to each station airing the program. To raise funds, a direct-mail solicitation was sent to all People For members, and "film auctions" were organized to encourage large do-

nors to contribute the cost of air time and promotion in a particular city.

From early October to early December 1982, *Life & Liberty...For All Who Believe* was shown in 31 media markets with a potential viewing audience of 25 million households. In addition, it was carried by WTBS in Atlanta, the satellite-delivered "superstation" that reaches 205 cable television markets. This gave the show a combined potential audience of 50 million television households—more than half of all U.S. TV households.

And the results? When all was said and done, People for the American Way and the issues that concerned them had received a great deal of national attention, and they had increased their membership rolls by almost 10,000. As a fund-raising vehicle, People For did manage to recover most of the costs associated with the program.

This trial run is instructive in several ways. Among the key lessons learned were that the best approach for an effective campaign of this sort is to create your own syndication network, picking markets where the program is likely to be well received; and that a "prime time" showing usually is best in terms of potential audience size.

Life & Liberty received extensive press coverage and gave People For The American Way a significant boost in membership. But these results, says People For's Paul Schaeffer, were always secondary to the project's original intent: public education. *Life & Liberty* was successful enough to spawn another film—this time on censorship—and Schaeffer says he thinks it's the sort of project others might emulate. In fact, he believes that any national organization looking to rapidly build public support might consider this route in lieu of other, more traditional options.

Another organization that has looked to

CENSORSHIP IN A FREE SOCIETY.
IT'S A BAD MATCH.
Censorship is the greatest tragedy in American literature. It constricts the mind, teaches fear and leaves only ignorance and ashes.
Today, all over the country, books are being banned, burned and censored. Teachers, students, librarians, and book and magazine publishers are being harassed.
The attacks of these self-appointed censors are endorsed by our silence.
The freedom to read is one of our most precious rights. Do something to protect it.
Contact:
People For The American Way, P.O. Box 18900
Washington, D.C. 20036 or call 202/822-9450.
People For The AmericanWay

Life & Liberty *proved to be a valuable membership recruitment vehicle for People for the American Way. People For has since followed* Life & Liberty *with public service announcements for print media.*

communications technology for fund-raising—in this case, satellite teleconferencing—is the Republican National Committee.

The RNC is using satellites in a variety of ways. Its first try was in August 1981, when it transmitted "live" campaign seminars to groups of candidates in Atlanta and San Francisco. Two months later, those attending the Western States Regional Conference in Idaho had an opportunity to question Republican leaders in Washington via a satellite hook-up.

That December, Vice-President George Bush, who was scheduled to be at a fund-raising event in Palm Springs, was unable to attend. The RNC found a more-than-adequate substitute, though: Bush delivered a 10-minute speech from Washington, D.C. via satellite. Then, for 45 minutes, he answered questions phoned in by those in attendance. The satellite charges were considerably less than the $5,000 an hour cost for Air Force One, and Bush was able to respond personally to questions from the field.

David Muller, the RNC's Director of Telecommunications, says that satellite communications undoubtedly will be on the agenda in the future, and most assuredly for fund-raising purposes. The advantage, he says, is that the organization can simultaneously have one speaker—the President, for example—addressing perhaps 100 sites. It won't be as intimate, he concedes, but still may be appropriate in some situations. Ideally, Muller adds, 20 or so sites might be linked for such a video conference—be it for fund-raising or informational purposes—so at least one question can be asked from each "downlink" site.

Like all fund-raising techniques, the use of video conferencing has had mixed results. In September 1981, United Methodist Communications spent over $150,000 on a video conference to kick off a $25 million fund-raising

The Mechanical Contractors Association turned its video conference into a revenue-producing venture.

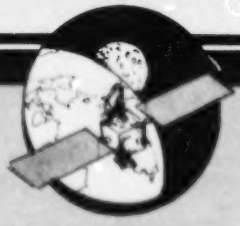
campaign, the purpose of which was to establish an endowment fund for TV and cable programming. The program, "TV Presence and Ministry," was broadcast from the Grand Ole Opry in Nashville, where a few thousand people had gathered. In addition, invited guests had gathered at about 120 downlink sites around the country, primarily hotels and public television stations.

This was not the first use of satellites by United Methodist Communications. The group previously had successfully linked a convention in Lincoln, Nebraska with a meeting of the World Council of Churches in Geneva, Switzerland. A phone hook-up permitted participants in Lincoln to ask questions to the European participants.

Putting together the satellite network for the fund-raiser cost UMC about $65,000; the rest was spent on producing the program, renting the facilities, and the like. Technically, the multi-site video conference, coordinated by the Public Service Satellite Consortium, went smoothly. But it fell short of its intended goals. "Key leadership people and potential contributors were invited to the event," says UMC's Nelson Price. "In retrospect, it wasn't the best way to reach potential contributors. It wasn't their kind of event."

Sometimes, though, a video conference can yield unexpected financial gains. This was precisely the experience of the Mechanical Contractors Association of America, which turned a video conference on motivational techniques into a revenue-producing venture. The 1982 video conference linked 39 sites in the United States and two in Canada with one-way video and two-way audio. More than 3,000 people participated in the five-hour program. Two-thirds of them were not mechanical contractors, but they wanted to be on hand for an event that promised to be an industry highlight.

Richard Maresco, the Association's Director of Education, says that more than 80 percent of those attending found the video conference exceeded their expectations. What Maresco discovered, though, was that the videotape of the conference, which focused on productivity improvement, was a saleable item. It appeared particularly saleable, he says, because rising costs recently have meant that only senior-level managers can attend seminars and conventions. With these tapes, the information would be available to all levels of management. "Our program is rated as one of the hottest things in the trades," Maresco says. "We'll make a real profit in 1983 marketing it."



IN•FOCUS

SATELLITES

In the beginning there was Sputnik I, the Soviet satellite launched into orbit in the autumn of 1957. Five years later, the first non-governmental communications satellite—AT&T's Telstar I—was lifted into space, and things just haven't been quite the same since.

Satellites now have a wide range of uses—from the delivery of telephone calls and streams of corporate data, to the transmission of radio and television programming. Satellites sit in "synchronous" orbit 22,300 miles above the equator, meaning they orbit the earth at the same speed the planet rotates on its axis. Thus, the satellite appears to be fixed in one spot above the earth. Because of their distance from the earth, satellites offer greater coverage area than other delivery systems. Topographical factors—mountains or valleys, for example—generally pose no obstacle. Signals can be beamed from one point to another or to numerous locations simultaneously, making satellites particularly cost-efficient.

In essence, a satellite is really little more than a sophisticated relay device: signals are beamed to the satellite from a transmitting antenna (the "uplink"), and then retransmitted to a dish-like earth station (the "downlink"). The key ingredients in the satellite are the "transponders," which switch and amplify the incoming signals before relaying them back to earth on a different frequency. Thirteen domestic communications satellites were in orbit in the fall of 1983, with a total of 264 transponders available to the United States for voice, data, and broadcasting traffic. (Most communications satellites now have 24 transponders, each of which can relay one video signal, 12 radio signals, or about 1,000 simultaneous telephone calls.) With demand for transponder space increasing, the FCC has authorized the launch of additional satellites, and by 1987 there may be nearly 1,000 transponders available.

Merely launching more satellites, though, does not solve all problems of access. For one thing, earth stations are still large and expensive—perhaps $10,000 to $15,000 for a three- or four-meter (10-15 feet in diameter) dish and related electrical equipment. In addition, the current generation of earth stations can only "see" one satellite at a time. This limitation, which is being eliminated with the newest generation of equipment, has led to certain satellites being used exclusively—or almost exclusively—for a particular purpose. RCA's Satcom III-R, for example (also called "Cable Net One"), is filled entirely with cable TV programming.

In rural and remote areas, where cable is too expensive to string and over-the-air TV signals are scarce, home owners have been installing their own earth stations. They are thus able to pick pay TV and other programming right off the satellite. This development has raised questions of signal piracy, and the Congress has been asked to review the penalties for such piracy.

One service which intends that consumers receive signals directly from the satellite—with no piracy or copyright problems whatever—is direct broadcast satellite (DBS) service. Because DBS uses high-powered satellites, viewers paying monthly fees will be able to receive special television channels directly from the satellite using small, relatively inexpensive roof-mounted antennas. It is expected that the dish, measuring about two-and-a-half feet in diameter, and all necessary electrical equipment will cost between $300 and $600.

Nine different companies have received FCC authorization to begin DBS service. The first DBS service in this country may be operational as early as late 1983.

CHAPTER

2

Publicity & Media Relations

In the spring of 1982, the Robert Wood Johnson Foundation turned what could have been a standard press release into an event receiving substantial print and broadcast coverage.

The Johnson Foundation is a New Jersey-based philanthropic organization devoted to improving health care in the United States. In 1982, it announced via press release a major grant program designed to consolidate health services for "high-risk" teenagers and young adults. This program led to the award of twenty separate grants in 18 cities, including hospitals and various cooperating community agencies. When it came time to announce the grantees, who collectively would receive $12 million, the foundation decided to make the formal announcement directly to those 18 cities via a video conference.

William Walch, Vice President of Communications of the Johnson Foundation, says the impetus for the video conference was simple: "What can we do to raise community support for these projects?" A number of existing agencies addressing the problem of health services for teenagers already were operating in the 18 cities, but their efforts often were duplicated or not well coordinated. The grant money would be used to help solve these problems. "We thought it was a good opportunity for the foundation to state directly, at one time, our endorsement of their efforts, our recognition of the difficulty of the task, and to state to the community that the problems were being addressed," Walch adds.

The video conference was produced by Net Telecon, a subsidiary of WNET-TV in New York, and beamed to public television stations in the other cities. About 800 persons participated; 100 of them, reporters. Following an eight-minute introductory film, the moderator opened the floor to questions in New York, and then to questions in other cities, linked to the New York studio by telephone.

An essential ingredient of the teleconference's success, Walch believes, was working closely with the public relations departments of local hospitals and agencies. Instead of the foundation trying to work with local media in all the cities, press releases were sent directly from the grant recipients, who also made calls to reporters. In each city, a news conference followed the one-hour teleconference.

The strategy proved effective. Not only did the event generate considerable local press coverage, but Cable News Network, a nationally delivered satellite cable service, used an excerpt, and local broadcast media taped segments at the actual hospital locations. In addition, local awareness generated by the event led to numerous speaking engagements for project directors. To make the most of this resource, the foundation edited the hour-long teleconference to one-half hour and made the tape available to participating cities for fund-raising and educational purposes.

Walch and the Foundation were pleased with the event and its outcome. "It could have been a

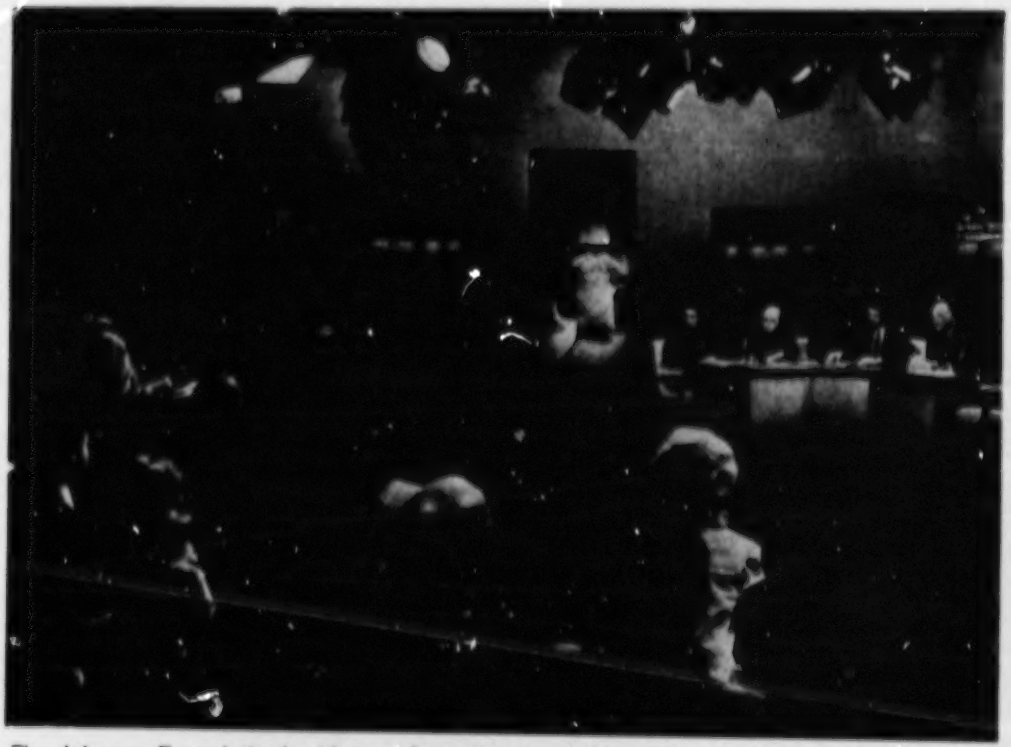
typical grant announcement story," he says. "Five lines in the newspaper." But he emphasizes that the foundation did not hold the video conference just for publicity's sake. "We were trying to say, 'Is there an additional way to support these projects?'"

A satellite-delivered video press conference may be effective, and it may be appropriate in the context of a $12 million grant announcement, but it's beyond the means of most nonprofit organizations. For groups with limited resources, there are other, less costly, alternatives available. It is possible, for example, simply to feed the video and audio portions of a press conference in one city to other locations and eliminate the interactive capability at the remote sites. An organization also can phone radio stations and transmit taped statements or interviews for recording at the station, or even use a satellite delivery system for mass distribution of pre-taped audio or video press releases and news segments.

In June 1982, when the American Federation of Teachers sought wide dissemination of a news conference on discrimination, it contracted with the Public Affairs Satellite System (PubSat) in Washington to feed a video clip from a morning news conference to TV stations across the nation. The day before the press conference, news directors at stations with satellite receiving earth stations were sent a Telex informing them of the satellite over which the clip would be fed and the time of the feed.

PubSat is the broadcast version of the Public Relations Newswire, which distributes press release information the way wire services deliver news stories. PubSat feeds are free to news organizations, and its radio transmissions are received by National Public Radio members and Associated Press affiliates—more than 1,400 stations. The nearly 300 commercial television outlets with an earth station can receive PubSat video feeds. The price of the service varies, depending on the length of the transmission and the number of stations receiving it. A 60-second radio spot sent to all stations in the PubSat network costs $750; a 90-second video insert, including production, costs $5,000.

PubSat does follow-up surveys with TV stations to find out how many stations carry its video "press releases," but it often is impossible



The Johnson Foundation's video conference generated significant press coverage.

to get accurate readings of how many radio stations use its material. If the content of the feed is truly newsworthy, it obviously has more of a chance of being aired. If every radio station capable of receiving PubSat feeds actually uses a 60-second spot, the cost to the originating organization is approximately 50 cents to reach each station.

One organization that has stayed with traditional media—and with good results—is the Public Agenda Foundation. For more than two months in 1982, the New York City-based research organization conducted Health Vote '82 in Des Moines, Iowa. The purpose of the campaign, funded by the John and Mary Markle Foundation, was to help citizens better understand and confront the issue of rising health care costs. Public Agenda did not promote a particular point of view, but, through a series of 200 or so community meetings, sought to help people make sense of the issues. The project was to culminate with a Health Vote ballot.

To conduct the campaign, the foundation elicited the help of a number of community and business leaders, health care professionals, and unions. Health Vote staff members met with editors of local newspapers and formed a local media committee. A series of public service announcements was produced, and a film detailing the issues was shown on every television station and on the Des Moines cable system. Press releases were issued regularly, and the campaign received extensive coverage in the media. In the end, more than 30,000 Health Vote ballots were cast by Des Moines-area residents. Public Agenda officials initially had expected that 5,000 or 10,000 might be returned.

What exactly is the best media strategy for nonprofit organizations? There is no one "best" strategy, but the advice of some experts is that nonprofit organizations create a media advisory board. Meeting two or three times a year with people knowledgeable about broadcasting and newspapers, public relations and advertising, can help an organization achieve its goals.

Almost any organization can help its cause by dealing effectively with local media. In some cases, this means providing editorial replies to local television and radio stations; in other cases, it means regularly supplying local media with information for which it receives credit. Some arts groups, for example, have produced one- or two-minute spots for local radio stations describing on-going shows. In other cases, organizations have done daily or weekly radio spots with calendar listings of noteworthy upcoming events.

Looking At New Options

Like the Johnson Foundation, the American Federation of State, County, and Municipal Employees, AFL-CIO has begun using satellites to generate media and community attention. AFSCME is organized into more than 2,800 local unions, representing more than 1.4 million public employees. To make sure its views on key issues reach the media, it established the Labor News Network. The idea is basic: if the media won't come to us, we'll go to them.

AFSCME has constructed a studio in its Washington headquarters from which it can originate both radio and television programming. Using leased space on a satellite, it can beam interviews with union officials to any broadcast or cable outlet that has a satellite-receiving earth station. The facility is ideal for interviews because AFSCME officials can be on the set, ready to talk live with reporters or tape a spot in just minutes. In addition to interviews, other kinds of programming— such as documentaries, for example—can be transmitted from AFSCME's facilities.

The network had its debut on July 29, 1982, when a press conference followed by an address by union President Gerald W. McEntee was beamed by satellite to television stations around the country. Stations had been notified in advance with specifics about which satellite would carry the event. The debut of the network generated significant press coverage. Organized labor had found a particularly effective public relations tool.

AFSCME realized that by using satellite technology it could offer news outlets around the country the national view of local union issues. Sometimes local stations call the union for an interview, and sometimes the union makes the first contact, volunteering its experts for live or taped interviews. After President Ronald Reagan addressed the Iowa legislature with his New Federalism proposals, for example, AFSCME was able to give its side of the story to Iowa television and radio stations via satellite connection.

What is particularly interesting about AFSCME's operation is its flexibility. If a station does not have a satellite-receiving earth station, the union will videotape a segment and send it by overnight mail. Broadcasters that do own earth stations can produce televised interviews in which the reporters sit in the local studio and ask questions of an AFSCME official in Washington. One time, a letter to news directors told of a 15-city teleconference the union was doing

On the set in the AFSCME studio.

on the proposed constitutional amendment for a balanced budget, and invited them to "look in" on the satellite broadcast and use any material they wanted. In short, a lot of bases are covered. "The name of the game for us is getting local media access," says one AFSCME official.

The National Education Association has similar views. On April 6, 1981, with the prospect of severe federal budget cuts to education looming in Congress, NEA went on the offensive. Mobilizing forces for this sort of effort is, of course, nothing new for NEA, but its tactics on this occasion constituted an entirely new strategy.

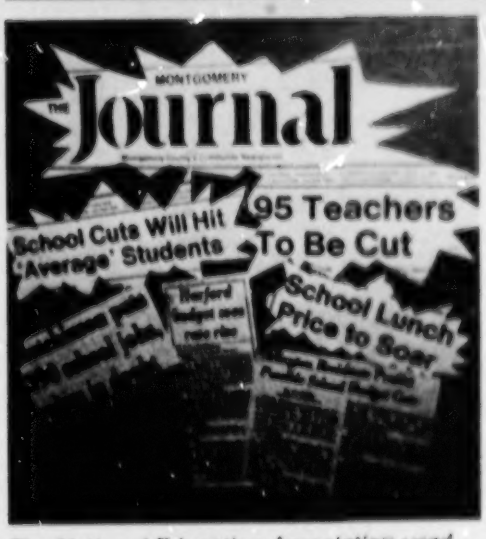
With the help of the Washington, D.C.-based Public Service Satellite Consortium, NEA put together a 48-site teleconference. The primary purpose of the teleconference, coordinated with just eight days' notice, was to motivate NEA members to lobby federal legislators for more money for education. But there was another purpose as well: to focus attention on this issue by generating press coverage from the teleconference itself.

NEA officials say both goals were met, and the association's experiences demonstrate how the right planning can translate into significant media exposure. Of 43 sites that responded to a follow-up survey, in fact, 19 reported receiving local broadcast coverage (both radio and television in some instances), and five reported receiving print coverage.

The teleconference was targeted to state affiliates that work with the national headquarters. It was hoped that general lobbying strategies would emerge from the conference, and, further, specific plans of action. School superintendants, principals, board of education officials, and the like were invited to participate at the teleconference sites (in most instances, public television stations). Also among the 678 in attendance were four U.S. Senators and a number of U.S. Representatives.

The teleconference linked the sites with one-way video and two-way audio. Participants could see the presentation, originating in Washington, D.C., and ask questions by telephone. Media coverage was encouraged, and to facilitate the process a sample press release was sent to each state for local distribution. The day before the event, NEA videotaped interviews with Senator Edward Kennedy of Massachusetts, House Speaker Thomas P. "Tip" O'Neill, and Representative Carl Perkins of Kentucky, Chairman of the House Education and Labor Committee. These tapes were telecast during the video conference, turning a strategy session into a newsworthy event.

On hand at the origination site were NEA



The National Education Association used relevant newspaper clippings during its video conference to help illustrate its point.

officials, including its President, Executive Director, and Director of Government Relations, all of whom made presentations. NEA representatives from five states were flown to Washington before the teleconference, where a 40-minute panel discussion was taped and subsequently edited to about three minutes. The purpose of this segment, which was included in the program, was to localize the issues and show that they weren't just a "Washington" problem.

Karen Jaffe, an NEA communications specialist, believes press coverage of the teleconference helped the organization lobby both in Congress and on the state level. Participants generally had a positive reaction to the event, and working coalitions for intended action actually were formed at some conference sites. NEA was able to use a tape of the teleconference as a training tool for those not in attendance.

The NEA video conference clearly wasn't held primarily for publicity, but rather to mobilize its constituency to action. But NEA wisely seized the opportunity to gain valuable media exposure. In many instances, nonprofit organizations have employed similar strategies, using fund-raisers, research projects, or almost any other activity to generate media coverage. Indeed, there are any number of ways to generate publicity using communications technology. And an organization need not always create a big splash, either. Usually, some steady ripples will do just fine.

For those using communications technology, the savings in time and money can be dramatic. Producing its video conference took less than two weeks and cost NEA $45,000. Jaffe estimates that to bring one or two people together from each site for a conventional meeting would have taken months to plan, and figuring in expenses such as food, travel, and lodging, would have cost more than $300,000.

IN•FOCUS

BROADCASTING

On September 15, 1921, the first regular broadcasting license was issued by the federal government to a Massachusetts radio station. Sixty-two years later, there are 4,848 AM radio stations on the air, 5,023 FM stations, 722 VHF TV stations, and 579 UHF TV stations. We have communications satellites, subscription television (STV), and low power television (LPTV), which may eventually mean as many as 4,000 additional over-the-air broadcast stations. In short, there is no dearth of broadcasting outlets and services.

Nor is there a lack of interest in broadcasting among the American public. Statistics show that 98 percent of the nation's 81 million homes have television sets. In addition, there are an estimated 457.5 million radio sets in use. The average home has 5.5 radios, while 95 percent of all autos are radio-equipped.

Broadcasting is regulated by the Federal Communications Commission, which allocates space in the radio spectrum for the various services, assigns stations their channel and power, and sees to it that licensees operate in accordance with prescribed rules. Because broadcasters are licensed to serve the public interest, the Communications Act of 1934 specifies that certain programming areas be addressed. There are political broadcasting provisions, for example, which stipulate that candidate for public office be afforded equal opportunity to use the station. The Fairness Doctrine requires that broadcasters cover important public issues and that a station presenting a viewpoint on a controversial topic offer a reasonable opportunity for the presentation of opposing viewpoints.

The FCC's interest extends beyond commercial broadcasting. More than 615 channel assignments have been reserved for noncommercial educational television, and 20 FM radio frequencies in each region available nationwide also have been set aside for noncommercial purposes.

One important service authorized by the FCC in 1955 is subsidiary communications authorizations (SCAs), used by many public broadcasters and nonprofit groups to provide reading services for the blind. SCAs allow extra information, receivable only on specially-equipped sets, to be transmitted on unused portions of standard FM channels ("subchannels"). SCAs also are used commercially for services such as Muzak and foreign-language programming.

Most commercial broadcasters rely on advertising revenues, rather than subscriber fees. However, not all over-the-air television is "free." At the end of 1982, commercial broadcasters in 22 cities were operating subscription television (STV) stations, pay TV services that transmit "scrambled" signals, which are deciphered by special decoders on subscribers' sets.

One medium that has would-be licensees looking toward both advertising and pay TV is low power television (LPTV), an over-the-air service with limited coverage area. When the FCC authorized LPTV in 1982, it had thousands of applicants—including a substantial number of nonprofit groups—waiting in the wings for stations. Although the concept of LPTV generated considerable interest, the technology is hardly new: LPTV stations are nothing more than translators, stations which until this action had been permitted only to rebroadcast signals of full-power stations to rural areas. Now these low power stations, whose signals can reach an average of 12 to 15 miles, are authorized to originate programming as well.

CHAPTER

3

Public Education

Shortly after the Federal Communications Commission formally proposed low power television service in September 1980, it was deluged with thousands of applications from established and would-be broadcasters. This, after all, was the first new broadcast service proposed by the Commission in nearly two decades, and it not only meant an opportunity to get on air, but to do so for a fraction of the normal price. The FCC estimated, in fact, that start-up costs for a 10-watt VHF low power station, whose coverage area typically would extend over a 12-to-15-mile radius, could run as low as $24,000. A one-kilowatt UHF station, with a similar coverage area, might mean an initial investment of only $82,000—a far cry from the $1.9 million average price tag to put a full-service station on air.

The prospect of new broadcast licenses attracted a wide variety of applicants, ranging from the United Auto Workers to the Seminole Tribe of Florida to the New York Public Interest Research Center. Low power TV, it was thought, could prove a special boon to nonprofit groups, providing a potential new forum for the presentation of their views. There was immediate talk, for example, of a public interest programming coalition. (Its status is still uncertain.) There were plans for educational and community-oriented programming, rebroadcasting of all-news cable channels, and, if this service really proved viable from an economic standpoint, any number of programming options that could effectively serve regions of the nation sorely in need of local media outlets.

If there were to be any debates about low power in the coming months, as applicants awaited an FCC decision on final authorization, they certainly need not have focused on the efficacy of the concept. Eagle Bend, Minnesota, operating with an experimental low power TV license, quickly put that question to rest.

But the tiny farming town of Eagle Bend took low power a significant step further, merging it with Instructional Television Fixed Services (ITFS), a point-to-point microwave service. The home-grown system, known as "Communicasting," was designed as an adjunct to traditional classroom education; it also was envisioned as an alternative to the limited TV and radio programming in the area, none of which was originated locally. The Eagle Bend system connects three school districts, offering courses to students in each location via two-way interactive television. The main studio and low power broadcast equipment is located in a portable classroom adjacent to the Eagle Bend school, while the other two schools are equipped with ITFS transmitters, color monitors, microphones, and other equipment needed to send and receive TV signals. Classes originating at the Eagle Bend school are sent via the low power station to classrooms in the other schools and the community at large. The remote schools beam their signals to Eagle Bend via ITFS, allowing the TV teacher to see and hear each of the remote sites on color monitors. When classes originate from one of

the remote sites, the ITFS signal is transmitted to Eagle Bend, and then routed to the other locations. In addition, the signal is broadcast live for the entire community on Eagle Bend's low power station, UHF Channel 45, whose coverage area extends about 20 miles in all directions.

The Eagle Bend prototype demonstrates how technologies can be merged for local educational purposes—whether in or out of the classroom. In addition to ITFS and low power television, the system relies heavily on the use of small format video equipment (a portable half-inch videocassette recorder and a $2,800 Sony camera) to tape special events. School administrators would like to add other programming options, such as House of Representatives coverage on the Cable Satellite Public Affairs Network (C-SPAN). The purchase of a receive-only satellite earth station is now being examined.

Eagle Bend School principal Richard Lundgren, the station's Program Director, says the Communicasting system was designed to serve both educational and community needs through instructional, educational, informational, and general-interest programming.

The instructional advantages were immediately realized: because there weren't enough students in any of the schools to justify hiring a foreign language or art teacher, those subjects had been excluded from the curriculum. But now, a German teacher in one school and an art teacher in a neighboring school can teach students in all three locations. And if a student is home ill, he can watch the class on television and communicate with the teacher via telephone.

There are obvious applications for other areas of interest as well: Lundgren says enough tapes are available, from the Public Broadcasting Service and other program producers, to warrant expanding the schedule to seven-day-a-week programming. Meanwhile, one community resident has volunteered to produce a local talk show, and a crew of 50 student volunteers, along with a few adults, help fill the current five-day-a-week, 14-hour-a-day schedule with such fare as local football and basketball games. The schedule also includes college-level classes for area residents.

Because the technology provides great flexibility, it offers a number of other options. The easiest, Lundgren says, is to add more schools to the system; if any of the dozen or so institutions in surrounding counties wanted to participate in the classes, they could do so by purchasing the ITFS transmitting and receiving equipment. Ultimately, Lundgren says, he's hoping to see a statewide network in place, an idea that already has been proposed to the state legislature.

The Eagle Bend project is just one example of how existing and emerging media are being combined to enhance traditional techniques of public education. In some cities, systems have

In the classroom at Eagle Bend.

been fashioned by established institutions for in-school purposes; in other areas, nonprofit organizations are creating systems that aim instead at serving the community at large. Sometimes the two overlap: academic systems serve the needs of the entire community, or at least are capable of doing so.

Special Strategies

The Robert Wood Johnson Foundation, which makes grants to improve health care in the United States, was looking for a way to supplement the efforts of its grantees on an ongoing basis. Foundation officials, well aware of the impact of television, also knew of the interest of TV producers in health-related subjects. Television, they decided, was the most appropriate technology for their purposes, and discussions resulted in a cooperative relationship with WCVB-TV in Boston and a nationally syndicated magazine-type health program.

The foundation views this partnership with the station as an ideal relationship. It is able to offer the station ideas and sources it wouldn't otherwise know about. This, in turn, benefits foundation grantees, whose work is receiving valuable exposure. Everyone, it seems, comes out ahead—including the viewer.

Another Boston-based experiment that made innovative use of over-the-air technology for local educational purposes was initiated in August 1982 by WGBH-TV, the city's public television station. The 11-month experiment, called SCOOP, brought a teletext service designed primarily for high-school students to more than a dozen sites in and around Boston, including Boston University and the Massachusetts Institute of Technology, seven area high schools, a public library, the Museum of Science, and, for a time, Bloomingdale's department store.

Teletext is a one-way broadcast service that allows viewers using a special keypad to request specific "pages" of information for display on their TV screens. In this case, news, sports, weather, and special interest stories were culled primarily from the Associated Press wire, supplemented with other material, and updated regularly from 7:30 a.m. to 6:00 p.m.

Project Manager Shelley Isaacson points out two important benefits: students not only had access to a source of news geared exclusively for them, but they often had an opportunity to write for the service, which helped sharpen their composition skills. On a day that the federal budget proposals were the major news item, for example, SCOOP's financial section featured a two-page story on how they would affect the nation's youth. Students, working with teachers in their classrooms, helped write the stories. "As a classroom vehicle, it has stimulated interest," Isaacson says. "It turns into a vocabulary discussion, or a discussion of how to write."

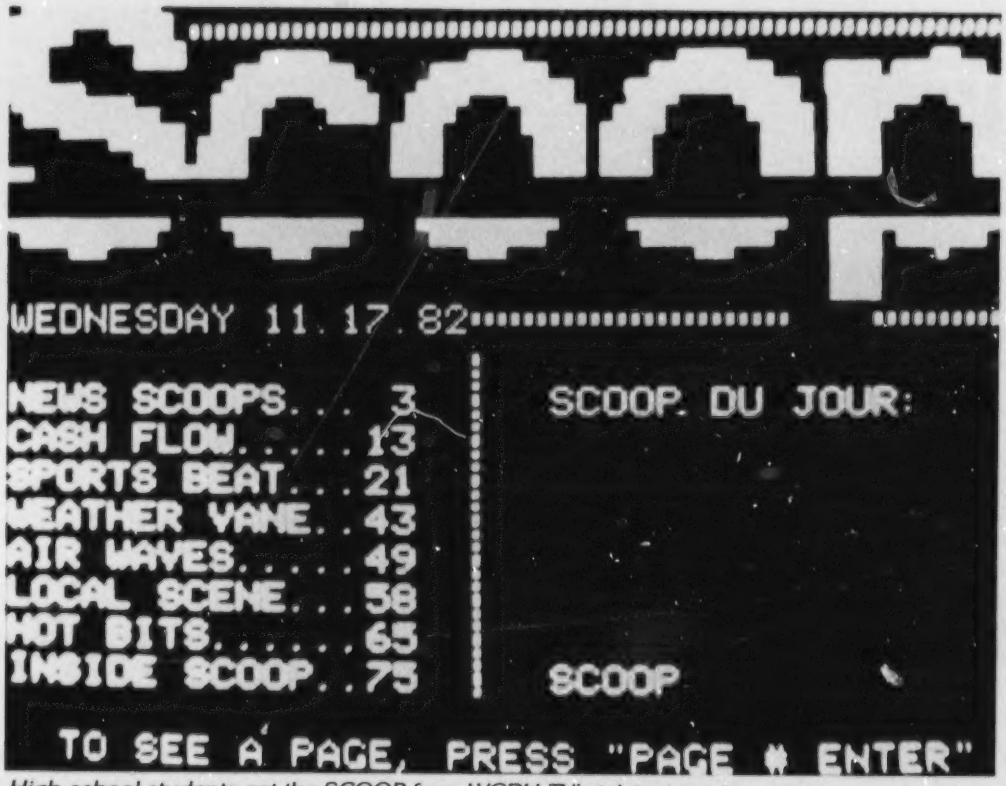
In New York City, New York University's Alternate Media Center (AMC) also produces a one-way text service—this one geared for the entire community—that adds cable television to the media mix.

The Apple Bytes project, funded by the Revson Foundation and inaugurated in February 1982, is an innovative community information service that carries everything from job openings and news items to upcoming events and editorials via the city's local cable system. Using an Apple II Plus microcomputer, approximately 150 "pages" of text and/or graphics (the equivalent of a 15-minute "slide" show) are sent directly to Manhattan Cable's "headend" for distribution to cable subscribers. A typical program, transmitted 10 times during a weekday and four times on a week-end day, is composed of about a dozen stories. Before each story, which typically is three to 20 pages in length (with 10 to 15 words on a page), the contributing organization is identified by its logo. Page changes are pre-timed: the length and content of a page determines the time it will remain on the screen. The fastest interval is three seconds. If there is material to copy—names and telephone numbers, for example—a page will stay up on the screen longer.

Information is delivered to the Apple Bytes headquarters from the participating community organizations either in person or by mail. There, AMC's staff formats the information on an Apple computer, graphics are added, and it all is stored in the computer. The text is then put on the Apple Bytes electronic bulletin board, where it can be accessed and checked for accuracy by participating organizations using their own terminals. It then is transmitted to Manhattan Cable.

Red Burns, Director of the Alternate Media Center, expects that AMC's experiences will pave the way for other cable systems. Now that AMC has created an operating manual, she says, anyone can follow suit. "The cable system or a community group could do it," she adds. "It just depends where the push is."

Public access centers offer other opportunities to use cable television for local educational purposes. In some cities, access studios are operated by the local cable companies; in other areas, they're separate facilities, funded and



High-school students got the SCOOP from WGBH-TV's teletext service.

The Apple Bytes electronic text service delivers "pages" of community information.

In some cities, systems have been fashioned by established institutions for in-school purposes; in other areas, nonprofit organizations are creating systems that aim instead at serving the community at large.

managed by a school, library, or community organization.

In many recent franchise agreements, cable operators have agreed to provide cities with fully equipped access centers. In some cases, the centers are managed by nonprofit organizations, which staff them and help produce and schedule programming. Funding for community access centers may come from cable companies, local governments, or from businesses and foundations.

In Frankfort, Kentucky, where a 30-year-old cable system recently was upgraded from 12 to 20 channels, the access channel has carried everything from an interview show hosted by a right to life group to a show on transcendental meditation. A local accountant moderates a call-in show with local politicians, and a weekly information show geared for senior citizens regularly deals with such subjects as Social Security benefits and crime prevention.

In Knoxville, Tennessee, an ambitious public access center has compiled more than 1,500 programs in its tape library—a mixture of local politics, arts, sports, religion, health, and just about anything and everything else. Channel 20, producing programming from the parish house of a local church since 1975, is funded primarily by the church in which it is housed and the city of Knoxville.

Channel 20 illustrates just how effective a community access center can be, and highlights the opportunities afforded nonprofit organizations. In Knoxville, any organization can produce programming for Channel 20, provided representatives of the group complete a four-session workshop that teaches the fundamentals of lighting, using a camera, and the like. A typical access center may have only a handful of ongoing series; in Knoxville, where some series have been running as long as five years, 26 different organizations contribute regular programs to the 47-hour-a-week schedule.

There is, for example, *Healthline*, a half-hour program sponsored by the Knoxville Medical Auxiliary, an organization of physicians' spouses. The format of the weekly show is straightforward: a member of the organization interviews a local physician on a medical topic. Other health-related shows include an 11-part series produced by the Kidney Foundation, half-hour programs on mental health produced by the local Mental Health Association, and tapes produced by the East Tennessee Heart Association. The Knoxville City Arts Council has produced series, as has a local university, the area Women's Center, and the Office on Aging. Station manager Peggy Gilbertson says that while a number of nonprofit groups in the Knoxville area do not have the time or staff to produce their own programs, they do take the opportunity to have their professionals or volunteers appear on Channel 20 talk shows.

Despite the abundance of available videotapes, access center programming rarely finds its way to channels in other cities. Some local access coordinators would rather not use another city's programming: they maintain that all programming should be indigenous. Others, however, would be happy to use appropriate material from neighboring or distant centers, but a system of cataloguing and distributing the tapes has yet to be developed. Some attempts have been made to "bicycle" tapes from one center to another, but little has come of it. When the tapes have been centrally catalogued, so that centers know what's available at any given time, and when the centers have access to satellite downlinks for networking purposes, tape distribution plans among community access centers will be more successful. One "network" already in place to help promote such sharing arrangements is the National Federation of Local Cable Programmers, based in Washington, D.C., which has been a leading voice in promoting community access programming.

Beyond The Town Boundaries

In November 1982, a local group in New York City began producing *News & Views*, a weekly half-hour public affairs program, for Manhattan Cable's Channel D. There is, of course, nothing remarkable about that: Channel D is a public access channel, the natural home on many cable systems for such programming.

But the following January, this group, known as the Not-For-Profit Network, toppled the bar-

Knoxville's Channel 20 produces a wide variety of community access programming.

riers that traditionally had confined access channel inhabitants to the city limits. Using a half-hour of satellite time, the network beamed its show on union organizing of clerical workers, "Is Equitable Really Equitable?," to more than 100 cable systems nationwide. The Not-For-Profit Network now hopes to go national on a regular basis, providing a forum for issues of national interest that routinely are ignored in other media.

The key to this distribution scheme is leasing satellite time on an ad hoc basis. But there are other factors, too. Specifically, how does one interest cable systems in the programming? Simply securing satellite time is no guarantee that a cable system will carry the show. And if the programming never makes it to the audience, the fees paid for satellite time obviously could have been better spent.

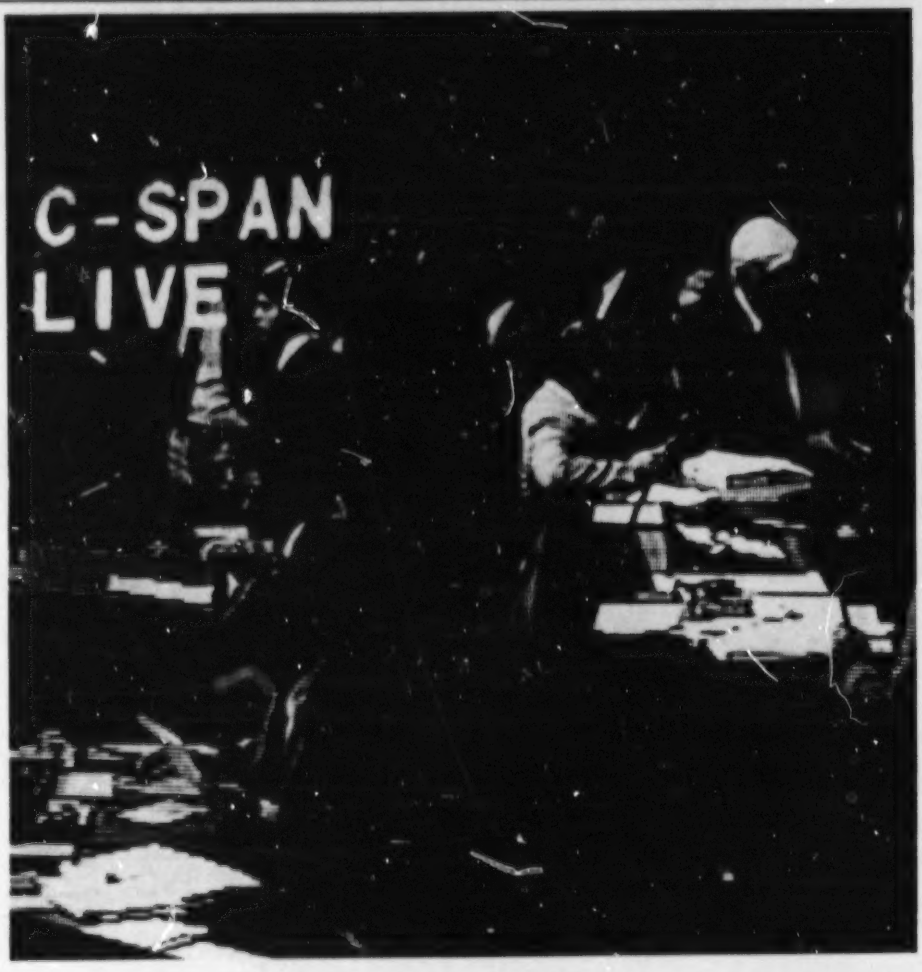
To avoid such difficulties, the Not-For-Profit Network plans to make use of specialized mailing lists to attract attention to its forthcoming shows. An organization involved in a production, says the network's Ingrid Arnesen, is likely to have a usable mailing list that can help to target specific cities or entire areas of the country where the show might generate interest. In addition, her organization has its own lists of contacts at cable companies.

But the ideal situation, Arnesen says, would be to have a regularly scheduled satellite time slot (that is being investigated), obviating the problems associated with creating an ad hoc network for each show. In the meantime, the network is continuing with its productions. When it has a substantial tape library, it plans to try to distribute the tapes. "We set up this network to create a container of time, so issues that need coverage can reach a larger audience," Arnesen says. The network, she notes, is simply a distribution vehicle; any nonprofit group can propose an idea, and if the subject matter seems right (i.e., if it has national ramifications, even though it may be a local issue), the network may agree to produce and distribute it.

The Washington-based Close Up Foundation also has begun to use satellites effectively for cross-country educational purposes. For more than a decade, Close Up has brought thousands of high-school students to the nation's capital for a week-long seminar on government. For the last two years, Close Up also has brought a bit of government to those students unable to travel to Washington. By using a network of cable television systems, Close Up's programs are made accessible to hundreds of thousands of students—young and old.

Close Up uses the facilities of the Cable Sat-

C-SPAN: A Window on Washington



When the Close Up Foundation beams its programming to cable television systems, it uses the facilities of the Cable Satellite Public Affairs Network (C-SPAN). Now available in more than 11 million cable homes and schools across the country, C-SPAN provides round-the-clock, seven-day-a-week programming. The staple of the C-SPAN program schedule is live, gavel-to-gavel coverage of the proceedings of the House of Representatives; the network also provides live and taped coverage of Congressional and regulatory hearings, political conventions, key speeches, conferences, and meetings in Washington, D.C.

On the air since March 1979, C-SPAN is an extraordinary idea: there usually is no running commentary or analysis, but rather unedited proceedings. What you see is what you get. Two national telephone call-in shows are part of the schedule, and in 1984 it plans to offer for the first time gavel-to-gavel coverage of the national political conventions.

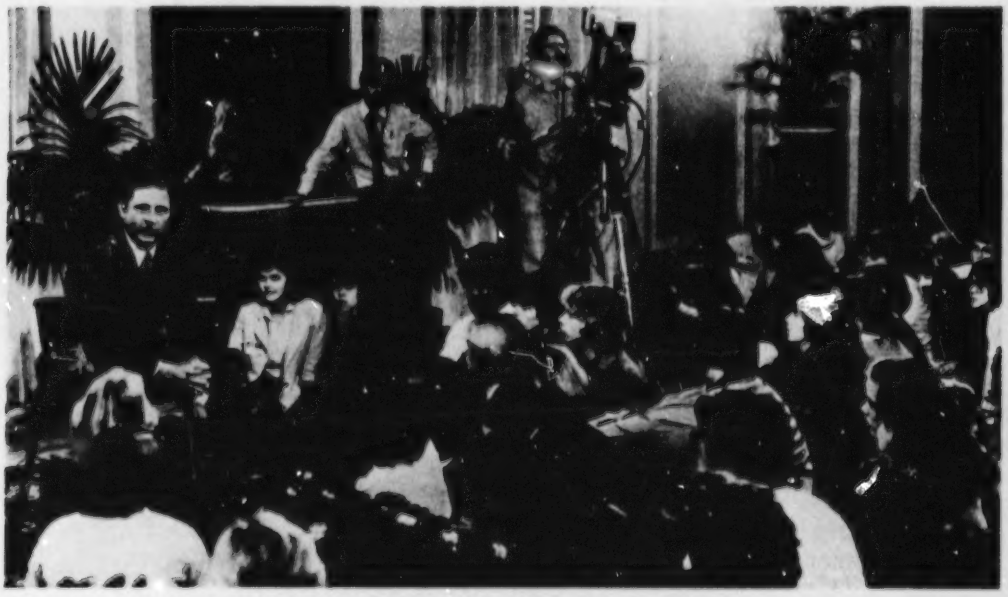
ellite Public Affairs Network (C-SPAN). The C-SPAN audience (see box) is, perhaps, ready-made for Close Up, which has a regular Thursday morning time slot on the network. One Close Up series, "Issues for the '80s," has a simple format: two prominent speakers with opposing points of view offer their opinions on a pertinent issue. Questions are taken from the studio audience, which consists of teachers who accompanied their students to Washington, as well as from viewers calling in from around the country. With selected shows, a "900" number telephone survey is conducted to sample the national audience. (The 900 number is a special service of AT&T that costs callers 50 cents per call.) One telepoll, for example, asked this question—"In general, do you approve of President Reagan's policies over the last two years?"—and logged 660 calls in 40 minutes.

A National Town Meeting

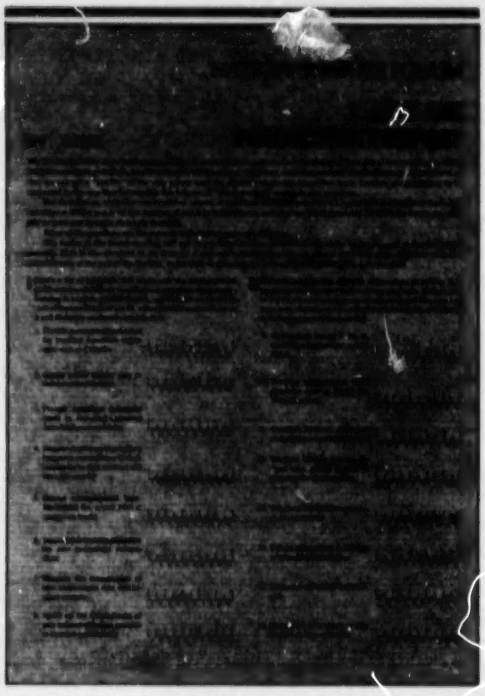
In the fall of 1982, nearly 10,000 people participated in a structured series of local discussions focusing on inflation, jobs and productivity, and Social Security. The National Issues Forums, sponsored by the Domestic Policy Association and funded by the Kettering Foundation, attracted participants to meetings at 145 sites in 16 states.

For the last two years, Close Up has brought a bit of government to those students unable to travel to Washington. By using a network of cable television systems, Close Up's programs are made accessible to hundreds of thousands of students—young and old.

The sessions were designed to be like town meetings: the three selected issues were discussed and debated, opinions aired, solutions proposed. Participants were given a study guide to read that paralleled discussions, and were asked to complete questionnaires on the issues both before and after the meetings. Those unable to attend the meetings were asked to re-



Close Up sessions in Washington are carried on cable systems across the country.



Participants in the National Issues Forum were asked to cast their ballots.

turn the questionnaires after reading the study guide.

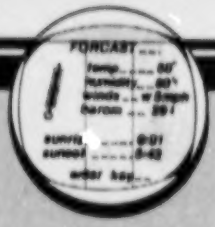
In Columbus, Ohio, a twist was added to the meetings: a one-hour panel discussion was videotaped and, over 10 days, aired six times on the local cable system. Viewers were alerted in advance by public service announcements that a study guide was available, and their participation was invited.

The forums were intended to serve as the beginning of a regular series to be conducted by the Domestic Policy Association. In 1983, education, nuclear defense, and federal budgeting are the issues planned for the National Issues Forums.

In February 1983, with the first year's local forums concluded, a two-day national conference of policymakers was held to discuss the issues and to hear reports from representatives of the local sessions. The First Presidential Library Conference on the Public and Public Policy was held at the Gerald R. Ford Presidential Library in Ann Arbor, Michigan to bring together policymakers and a number of citizens who had participated in the forums. During the conference, pollster Daniel Yankelovich reported to the assembled policymakers on the results of the questionnaire survey that had been completed by local forum participants.

Also on hand to address the conference were former Presidents Gerald Ford and Jimmy Carter. Looking on in more than a dozen cities were forum participants, who were connected to the opening session through a video teleconference funded by the Benton Foundation. From Memphis to Tacoma, groups of people who had taken part in the local forums could look in on the national proceedings. And through a telephone hook-up, questions could be called in to the conference. By enabling local forum attendees to "participate" in the national meeting, the video conference demonstrated the potential of the new communications technologies to enhance public involvement in the consideration of critical policy issues.

BEST COPY AVAILABLE



IN•FOCUS

VIDEOTEX

Videotex is the generic term for systems that allow users to select "pages" of electronically transmitted text, sometimes with graphics, for viewing on a standard television set. There are two major forms of videotex: teletext, which is one-way; and videotext, which is interactive. In addition to systems that allow subscribers access to hundreds—even thousands—of pages of material, examples of videotex include captioning services for the hearing impaired and "on-line" database services like CompuServe or The Source.

It is expected that perhaps half of all American homes will be able to receive some sort of videotex service by the end of this century. These systems will bring into our living rooms such services as electronic delivery of newspapers and magazines, at-home banking and shopping, electronic mail, and direct access to hundreds of data bases.

A simple version of teletext, provided by dozens of cable television systems across the country, has been available for more than a decade. On these channels, updated news and weather summaries continually scroll across the screen; viewers can't call up specific information on these "electronic newspapers," though, but rather must wait for it to appear on the screen. Viewers may have to watch for several minutes to catch the latest baseball scores or updated weather forecast.

More than 20 broadcast licensees have experimented with teletext, which usually offers up to 200 cycling pages of information. Ordinarily, teletext signals are transmitted through a largely unused portion of a standard television signal called the vertical blanking interval (VBI). The sole use of the VBI until recently has been to guide the electronic gun, which creates the picture inside the television. Subscribers use a special keypad attached to the TV set to signal which pages they wish to call out of the cycling stream of information for display on the screen.

It also is possible to deliver teletext using a full channel of a cable system or a low power television station, offering subscribers thousands of pages of information rather than the 100 to 200 available using the VBI. In one test that started late in 1982, round-the-clock teletext is transmitted via satellite for delivery on full cable channels.

Videotext uses two-way cable channels or telephone lines in conjunction with sophisticated computers to make virtually unlimited amounts of information available to subscribers. But it is the interactive features of videotext—services such as home banking and "teleshopping"—that make it so attractive. With teletext, a subscriber could search a limited database for the best buys on an item. But with interactive videotext, that same subscriber could not only find the best buys, but pay for the merchandise and transfer funds from his bank account to cover the transaction.

Similarly, videotext systems offer ideal research support services. Up-to-the-minute news is available by searching wire-service computers; information from publications like the *Federal Register* can be easily found. And one can gain access to an increasing number of special interest databases—everything from House and Senate committee schedules to corporate profiles—using services like The Source.

It is expected that videotext will be a $5-billion to $10-billion business by the end of this decade, and a number of major communications companies, including the New York Times Company, Times Mirror, CBS, and AT&T have been involved with tests—using both cable and telephone lines for transmission.

CHAPTER

4

Consensus Building & Advocacy

Consensus building and issue advocacy have long been the *raison d'etre* of many nonprofit organizations, but few, it seems, have strayed from such traditional courses as newsletters or direct mail solicitations. Recently, however, some have experimented successfully with new technologies—or new uses of existing technologies. What can be learned from their experiences?

The telephone is a good place to begin. Automated taped message (ATM) systems, used effectively for fund-raising, also are being employed successfully in advocacy campaigns. Using an eight-line ATM system, an organization can reach about 800 homes an hour with a 30-second message. These can be timely legislative alerts or pre-notification of forthcoming letters. Such systems, of course, should be used with sensitivity and restraint so that they do not end up annoying the very people one is trying to attract.

The telephone can work the other way as well: an organization can establish a toll-free incoming "800" number that delivers a recorded message. Just as they would with an answering machine, a caller wanting additional information can leave his name and address on a tape that follows the recorded message.

Of course a telephone message may not require any reply. Some organizations, in fact, have regularly scheduled taped announcements which their members or the news media can access by telephone.

Every Friday afternoon, for example, the League of Women Voters records a new message for its answer-only tape machine. League positions on key issues are detailed, and strategies are outlined. The tape makes clear that the message is intended for League members only, and not for use by the broadcast media.

"This week's action items are on ERA, clean air, and jobs legislation," one tape said.

"First ERA. H.J. Res. 1, the Equal Rights Amendment, now has 235 co-sponsors; 290 votes are needed to pass. On the Senate side, we have fifty-six co-sponsors for S.J. Res. 10, the Equal Rights Amendment; sixty-seven votes are required for passage. Both H.J. Res. 1 and S.J. Res. 10 have been referred to their respective Judiciary committees. The upcoming February 10 report from the Hill contains a complete list of co-sponsors. Please contact your Members of Congress and urge them to co-sponsor the Equal Rights Amendment."

On the other side of town, another phone system, whose message is changed daily, sounds something like this:

"It's Friday, February 25, and this is Washington Dial, an information service of the Chamber of Commerce of the United States.

"The House and Senate took few significant actions this week, but that didn't mean things were quiet on the Hill. There were numerous developments in committees and behind the scenes...."

Answer-only tape machines are inexpensive, and they offer a simple way to reach large numbers of people quickly. Reporters can be en-

couraged to call these systems for items of interest, making them a good way to promote an organization's position.

Over-the-air Strategies

One of the most ambitious advocacy projects using new media is The American Business Network (BizNet), a satellite-delivered service launched by the U.S. Chamber of Commerce in 1982. Housed at an elaborate, state-of-the-art facility in its Washington headquarters, BizNet was designed to give the Chamber a nationwide platform to promote the business point of view on national issues.

The Chamber already had a head start. Its syndicated weekly television show, *It's Your Business*, airs in about 100 markets, and its weekly radio series, *What's The Issue?*, is carried by the Mutual Broadcasting System network. But while those programs are intended for a wide audience, BizNet is available only to subscribers who pay an annual fee for the service and are outfitted with satellite-receiving earth stations. BizNet subscribers generally include local chambers and large corporations. Five days a week, BizNet offers subscribers business and political news, Congressional testimony, and interviews with newsmakers. Beyond its programming capacity, though, BizNet also is used for teleconferencing. A business or political leader, for instance, can field questions via telephone from those watching. Or if a small group of subscribers requests information about a certain topic, a show might be broadcast just to that group, rather than to the whole network.

The Washington, D.C.-based Population Action Council looked to traditional broadcasting for grass-roots organizing. The group enlisted the help of some well-known personalities, including Charlton Heston and Beatrice Arthur, for a series of public service announcements. The 30-second radio spots focused on the problems associated with overpopulation, and gave an address to write to for more information. Those writing received information about

The Chamber of Commerce's TV show, It's Your Business, *is produced in the BizNet studios.*

the issue and the Population Action Council, but no appeals for donations.

The campaign was designed only to bolster the organization's grass-roots efforts, says an official of the group. It was not a fundraising effort. The goal was to find 75 people in every Congressional district who would be available from time to time to telephone their Congressional representatives about pending legislation. Existing membership lists were analyzed, and tapes of the PSAs, along with an explanatory letter, were sent to stations in targeted areas. The PSAs were well received, and the group subsequently began planning a television campaign that will use the same audio with a photo of the person delivering the message. The one possible drawback of PSA campaigns, of course, is that organizations have little control over what stations actually will air the spots or when they will be aired.

Radio also has been used by the SANE Education Fund, whose primary concern is the nuclear arms race. In November 1972, the Philadelphia chapter of SANE began producing a radio show at the local public radio station. By 1980, *Consider the Alternatives*, the magazine-format interview show offered free to stations, was airing in about 500 markets. Its big boost had come after the organization joined a network that sends regular mailings to stations listing available programming. In addition to *Consider the Alternatives*, the SANE Education Fund produced a number of specials, including a 13-part series in 1980 on the effects of living with the nuclear bomb. That series drew considerable interest and attention, and approximately 700 stations aired it.

"That told us we could no longer afford our success," says Steve Shick, Executive Director of the SANE Education Fund. "The tape was too expensive to give away. We decided to move to paid syndication."

Many stations were unwilling to pay the two-dollar cost for the show, however, nor were many willing to pay five dollars a week for a daily, two-minute spot called *Insights*, which debuted in the fall of 1982. Syndication dropped from 500 to about 150 stations, although the program now is aired in nearly all of the top 80 radio markets.

One particular problem, Shick says, is lack of funds for promotion. The show has been well received and has few peers in terms of public interest-oriented radio programming. But because there is so much "free" programming available, stations appear reluctant to pay for SANE's series.

Eventually, Shick says, SANE would like to return to free distribution. One recently implemented plan that may help accomplish that is an incoming "800" phone number announced at the end of each program. The phone line enables SANE staff to explain the goals of the organization to callers, and this has been translated into new memberships. It also is showing promise as a fundraising tool: about one hundred people a week are calling SANE and buying a packet of literature. Also for sale are copies of the organization's radio shows.

Look For The Union Label

Organized labor has been well out in the lead in its use of new communications technology for consensus-building. In the summer of 1982, a coalition of unions sponsored a video conference intended to mobilize public opinion against a constitutional amendment for a balanced budget. Information packets were distributed to field workers in advance, and questions were phoned in from all eleven sites. Those participating saw and heard union and political leaders, and specific plans were outlined for lobbying strategies and petition drives that would begin the following week. The medium allowed the coalition to reach, respond to, and mobilize members very rapidly.

In early 1983, the Postal Workers Union arranged a 50-site video conference with more than 4,000 participants. The union was concerned about proposals to bring its members into the Social Security system, and it was gearing up for a large lobbying effort. Those who attended received information packets that included explanations of the proposals, sample letters to legislators, voting records of every Member of Congress, and the like. Because of the unique reach of a single media event, the union was able to coordinate a national grass-roots campaign that would bolster its other media efforts.

Perhaps the most elaborate event of this sort was staged by the United Steelworkers of America in September 1982, which transformed its constitutional convention in Atlantic City into a multi-site teleconference. The purpose of the video conference was to voice displeasure with federal policies and to mobilize unemployed union members, many of whom could not afford to attend the convention. Using teleconferencing technology, the convention was brought to them.

What was especially ambitious about this teleconference was that the 18 receive sites—primarily union halls—had transportable satel-

You can't cure Social Security by making Civil Service Retirement sick.

Everybody in America knows that Social Security is seriously under the weather.

In Congress, some say that one way to save Social Security is to make new government employees contribute to it and let their own Civil Service Retirement Fund dry up. They say that help from Civil Service will be part of a quick and easy cure for the sick Social Security System.

Don't let them kid you. The brutal fact is that this so-called "cure" will cost the government a lot of money . . . about 13 billion dollars each and every year for the next forty years!

And where will this money come from?

From the taxpayers, of course. Not only will today's taxpayers foot the bill, so will your children and their grandchildren. That's the kind of cure that really hurts!

So write to Congress. Tell them you can't cure Social Security by making Civil Service Retirement sick.

This message sponsored by the American Postal Workers Union. For more information, write for a free booklet.

AMERICAN POSTAL WORKERS UNION, AFL/CIO

Moe Biller, President 817 14th Street, N.W., Washington, D.C. 20005

Strategy for the Postal Workers' lobbying campaign was coordinated with a multi-site video conference.

lite earth stations brought in for the event. Four or five stationary cameras recorded proceedings in the convention center, while one camera roved the floor. At the receive sites, where local unions had organized "mini-conventions," participants watched on seven-by-ten-foot projection TV screens. Everything about the two-hour teleconference, including phone calls from sympathetic political candidates, was well staged. Pre-produced video inserts were used, and the signal was fed directly to major news organizations. It was highly motivational—and it was highly successful. "The site coordinators didn't know a satellite dish from a serving dish before they started," says one union official. But a post-teleconference evaluation meeting found all coordinators enthusiastic about the concept and ready to do it again.

Another over-the-air option being eyed in some quarters as an advocacy tool is low power television. Finding time for programming on established television stations often is difficult or costly. But because low power stations can be put on air and maintained for far less than full-power stations, a number of nonprofit organizations have applied for licenses to operate them. The United Auto Workers, for example, has applied to the FCC for a string of stations in a number of states. A network of this sort would give the union a valuable forum for the presentation of its ideas.

Whether the UAW will get the opportunity to put these stations on air is still uncertain, because the Federal Communications Commission has thousands of applications to process, and in most cases there are competing applicants for each frequency.

Labor also is betting that cable television will prove an ideal medium for the delivery of their message. One reason is that, in many locations, there are unused channels—commodities in short supply in broadcast television. Another reason is that cable TV is well-suited for "narrowcasting," its multiple channels making special-interest programming feasible.

The Labor Institute of Public Affairs (LIPA) is the arm of the AFL-CIO looking to bring advocacy programming to cable TV. Recognizing the power of the media as an organizing tool, the AFL-CIO's Board of Directors gave LIPA a clear mandate: Give the labor movement "a permanent, consistent, visible, and effective voice in the electronic media." One way LIPA plans to go about accomplishing that is with the Labor Cable Channel.

LIPA expects to identify two pilot cable markets and begin programming in the fall of 1983. Pilot markets must have both a large pool of potential viewers and a cable system that is receptive to the idea. Local production companies will be formed in those cities, with the intention of cablecasting one hour of programming five nights a week. Some of the material will be produced by the local units, while some will come from the national headquarters in Washington. Plans also call for selling advertising to support operations.

There is no secret about what LIPA hopes to accomplish with the Labor Cable Channel: organization officials see it as an educational, advocacy, and organizing vehicle. They predict the channel will be of interest to union members, but also hope it will help educate the general public about unions. If the tests in the first two markets are successful, LIPA hopes to expand to 30 or more markets in 1984.

Although the use of new technologies for purposes of grassroots organizing is relatively new, labor officials believe these media will become permanent fixtures in advocacy campaigns. The reason, says one LIPA official, is that consensus building and advocacy will no doubt remain of major interest to unions and nonprofit organizations, and events such as teleconferences, which have proven successful, undoubtedly will generate enthusiasm. "It all gets down to how important it is to the people doing it," she adds.

I N • F O C U S

CABLE TV

Three decades after cable television's rather quiet beginnings, the United States appears well on its way to truly becoming a wired nation. Recent estimates put the number of cable subscribers at 25 million to 30 million (30 to 35 percent of a projected 83.3 million television households), while cable is estimated to be available to about 60 percent of all television households.

The numbers continue to grow. Many of the nation's major urban centers are finally having cable systems built, while other cities are in various stages of the franchising process. In addition, many of the older, smaller systems—most often, 12 channels—are being upgraded. As this occurs, cable systems that were limited to improving reception of nearby TV stations and importing distant broadcast signals will be able to carry a plethora of new services.

Cable operators are required by the FCC to carry local television signals on their systems (they need not carry low power TV stations, however), and may further offer subscribers such options as distant broadcast signals, satellite-delivered pay programming, in-studio productions, or videotex. All programming, no matter what the original source, is delivered to subscribers from the "headend"—the master control center of the cable system. From the headend, the signal is sent to subscribers' homes via a series of overhead or underground coaxial cables, each of which can carry up to 50 or more television signals (although 20 or 30 is more common) and the entire FM band. The coaxial cable differs greatly from the copper wire that brings telephone service into the home. The signal-carrying capacity of coaxial cable is aproximately 225,000 times greater than the telephone wire. The cable delivery network resembles a river and its tributaries: a "trunk cable" leaves the headend, "feeder cables" move the signal into distinct areas, and a "drop cable" brings the signal into the subscriber's home. Along the way, a series of amplifiers help maintain signal strength. In the home, a special converter, which acts like a standard TV tuner, feeds the channels into your television set for viewing.

More specialized cable systems also are a possibility—an option favored by some universities. The simpler of these systems may only connect a series of classrooms; the more elaborate compare favorably with sophisticated municipal systems.

But institutions need not have their own specialized systems to avail themselves of the advantages of cable. Cable is regulated in large part by local and state governments, which have the power to grant franchises. Franchise agreements often stipulate that schools and public buildings be wired by the cable operator. Franchises also may provide for educational, local government, library, or public access channels. They thus give the entire community opportunity to use the system

As a municipality considers the award of a cable franchise, would-be franchisees now routinely offer such services as fully equipped public access centers to burglar and fire alarm capabilities, and one hundred-plus channel systems. Perhaps the most sought-after option, though, is two-way capability, which allows signals to travel both from the headend to the user and the user to the headend. Two-way interactive communications allows for options such as viewer polling and energy monitoring devices. Warner-Amex's interactive QUBE cable system, first built in Columbus, Ohio in 1977, has generated considerable interest, and other cities are now looking to follow suit.

CHAPTER

5

Research & Dissemination

Early in the 1970s, the American Enterprise Institute, a Washington, D.C. research institution (known popularly as a "think tank"), regularly sponsored small seminars with experts in particular disciplines. Someone finally suggested that if the seminars were filmed for television, the discussions could be of value to a much broader audience, especially in the academic arena. What evolved was a 90-minute program that included discussions among panelists and questions from an invited audience. Journalists, government officials, and industry leaders were on hand in the studio, and the panelists represented all points of view. *Public Policy Forum* produced lively debate, and a few television stations began to carry the monthly show.

When former CBS News reporter John Daly was brought in as moderator, interest increased. The program was shortened to one hour, and AEI successfully syndicated it in the top television markets. The shows had no particular "news peg," but rather were meant to be timely for as long as two years. A radio version also was produced, and AEI sent broadcasters a catalogue of available programs. Over a two-year period, some programs were shown as many as 600 times; as many as 12,000 radio and TV tapes were sent to stations in a single year.

Because of the expense of producing the series ($750,000 a year), *Public Policy Forum* was canceled in March 1982, although occasional specials have been produced. AEI would like to produce a regular series again, but a spokesman says costs may dictate a half-hour show—despite the protests of some stations and universities, who maintain that the hour-long format is better for fully exploring a subject.

There are, of course, other strategies for collecting and disseminating research by means of communications and information technologies. Through a combination of telephones and computers, for example, research reports can be updated continually and made available to wider audiences.Consider a recent project of the Center for Learning and Telecommunications, a program of the American Association for Higher Education in Washington, D.C. Early in 1983, the Center published *Meeting Learners' Needs Through Telecommunications: A Directory and Guide to Programs*. The 262-page resource book (available from AAHE) focuses on current educational applications of telecommunications technologies by 70 post-secondary organizations, including colleges, consortiums, associations, and nonprofit groups.

For nearly three years, the Center had published a bimonthly newsletter, *Telescan*, that highlights trends in telecommunications, sources of information, and abstracts of noteworthy newspaper, magazine, and journal articles. The Center had accumulated considerable information on books, research documents, programs, and funding sources, but there had been enough room to print only a

portion of it in *Telescan*. The flow of information, the staff found, was increasing rapidly, with new and important developments becoming almost routine. The best way to make all this information easily and readily available, Center officials decided, was to create a computer database.

The Center was founded in July 1980 with support from the Carnegie Corporation of New York. In January 1983, it began a six-month pilot program to offer *Telescan* subscribers telephone access to a computer-based inquiry service. Two afternoons each week, subscribers could phone in requests for searches, which were handled by the staff. A typical search, free to *Telescan* subscribers during this pilot program, yields book and article citations, conference and workshop proceedings, contacts at appropriate organizations, and knowledgeable resource persons. Following the search, the staff reviews the printouts, adds comments and suggestions, and, within one week, mails the results and any other available supporting material to the subscriber.

A system of this sort has enormous advantages. For one thing, it provides access to a fully cross-referenced database that can be virtually unlimited in size and scope. Retrieval of information is fast and efficient, new information is easily added to the database, and there is no lag time between the receipt of new information by the Center and its availability for widespread dissemination. It is, in short, a better way of doing business.

Indeed, the advent of new information technologies has the potential to make the acquisition of information for all types of organizations simpler and less expensive. Rapid dissemination of that research also is an easier task, as new information or research reports can be made available to targeted audiences virtually moments after it has been received or developed by an organization. Much of this progress is attributable to computers, which can "talk to" one another. A national organization, for example, can make its continuously updated computer databases available to its state and regional chapters for the price of a phone call. Important legislative and regulatory notices, culled from wire-service reports and special-interest databases on other computers, can be stored in "electronic mailboxes" or posted on "computer bulletin boards" for members to read. Research can be more comprehensive and the information is not quickly dated.

The Library of Congress for example, has a computer system that provides patrons access to a variety of databases, some of which are updated daily. Computer terminals in the Library and in Congressional offices give detailed summaries of legislative proposals and help locate books and magazine articles on specific topics. In addition, the National Referral Center Master File gives a detailed listing of organizations concerned with specific subjects. Once the information is located by the computer, it

AEI called on John Charles Daly to host Public Policy Forum.

Much of the progress is attributable to computers, which can "talk to" one another. A national organization, for example, can make its continually updated computer database available to its state and regional chapters for the price of a phone call.

can be copied from the display screen or printed out on the library's computer printers.

A similar type of service, though on a much smaller scale, was begun in March 1983 by Partnerships Dataline. A toll-free "800" number was established to give callers access to a computer database containing more than 6,000 examples of self-help efforts around the nation.

The service is managed by the Citizens Forum on Self Government/National Municipal League of New York in cooperation with the Washington, D.C.-based Partners for Livable Places. It is an outgrowth of the President's Task Force on Private Sector Initiatives, which collected more than 2,500 examples of public-private partnerships. These examples were combined with CIVITEX (Civic Information and Techniques Exchange), the database of Citizens Forum, and Livability Clearinghouse, the database of Partners for Livable Places.

Those calling Partnerships Dataline USA speak with information specialists who may be able to offer answers immediately. (It also is possible to "call" Partnerships Dataline via the Telecommunications Cooperative Network's electronic mail network, explained in Chapter Eight.) If these experts can't answer questions immediately, a computer printout is generated that details relevant experiences of other communities, including names and telephone numbers of local contacts. Subjects covered in the database range from employment and economic matters to race relations and community health.

Dialing For Data

Because of the increasing accessibility of computers, and because of the ease with which they can search through large quantities of information, there has been a dramatic growth in the number of "on-line" databases available to businesses and consumers.

Major newspapers, newsletters, and wire services now are directly accessible by computer, as is specialized information. The Berkeley Solar Group Computer Service has data geared for architects and engineers in the solar energy field; the State Publications Index provides updated listings of all materials published by the 50 states; and Interlink Press Service (described in detail in Chapter Seven), makes available Third World news from foreign feature services.

On-line research has distinct benefits. Many databases permit "key-word" searches, so that an organization can narrowly define the parameters of its research and, at the same time, be assured that important documents or news items are not overlooked. No longer is it necessary to wait for new information to be printed to have access to it, and geographical boundaries are eliminated. For instance, one need not travel to the Patent Office in the Washington suburbs to locate details about all the solar energy patents granted in the last decade—the database is available on-line.

Organizations that need to monitor Congressional and federal agency actions can do so with Legi-Slate. This database, updated daily, includes *Federal Register* notices, details about every bill and resolution introduced in Congress, upcoming committee schedules, legislators' voting records, and actions of some state legislatures. If users request it, the service can give them a regularly scheduled status report on bills of interest to their organizations, and it's possible to arrange for automatic searches of the *Federal Register* that locate specific words, agencies, public laws, and the like.

While Legi-Slate obviously can be a helpful tool for advocacy organizations, the cost of the service may seem beyond the reach of many of them. In March 1983, the minimum cost for Legi-Slate was $390 a month. This included instruction handbooks, staff training, and two hours' usage time each month, which is probably sufficient for most groups. Additional on-line time is $195 an hour. But, if you compare the cost of using Legi-Slate with the cost of having a person trying to keep track of that same information, the potential savings become more evident.

Not all database services are expensive. Some vendors offer subscribers access to a "menu" of information services, each of which has its own rate schedule. NewsNet, for instance, makes available to subscribers about two dozen newsletters ranging from *Coal Outlook Marketline* ($36 an hour to individuals) to

Telephone News ($24 an hour).

Among other on-line services are the New York Times Information Bank, which provides access to a number of newspapers across the country, including, of course, the *New York Times*, and the Dow Jones News/Retrieval Service, a business and financial service that lets subscribers search an enormous pool of articles from *The Wall Street Journal*, *Barron's*, and the Dow Jones News Service. Cost of the service is about $30-$60 an hour, depending on the files used and the time of day.

For organizations that do a lot of newspaper and magazine research, Nexis, a service of Mead Data Central, is an option. Nexis carries newspaper and wire-service stories dating back to January 1, 1977, and magazine articles from January 1, 1975. Sources in the data bank include the Associated Press, United Press International, Reuters, *The Washington Post*, *Newsweek*, *Dun's Review*, *The Economist*, *U.S. News & World Report*, the Public Relations Newswire, and *Congressional Quarterly Weekly Report*. Costs for Nexis generally are about $60-$90 an hour, and the computer prints the full text of stories rather than short citations or abstracts. Unlike many databases, though, Nexis can be used only through special terminals supplied by the company.

Dialog and the Bibliographical Retrieval Services (BRS) each offer dozens of research-oriented databases. Among the subjects available on Dialog, for example, are criminal justice abstracts, environmental and food science citations, sociological and psychological abstracts, statistics from the U.S. Commerce, Energy, and Labor Departments, *Federal Register* abstracts, and even a philosophy index. BRS, which offers a different collection of subjects, also has an important option for organizations with limited resources. Its "AfterDark" service can cut search costs in half.

There are, in addition, other options. CompuServe and The Source are commercial services that put on-line dozens of databases, some of which cost as little as $5 an hour. Although these networks are geared primarily toward the home user, they also make available newspapers and wire services, federal government news and Congressional schedules, and electronic mail.

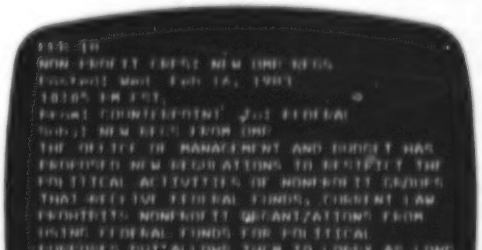
The Source, a subsidiary of Reader's Digest, actually allows users to become "publishers." An organization with a newsletter or magazine it believes is of interest beyond its constituency can request that its database be added to The Source. If it is accepted for the "Public" database, it receives a royalty for usage by Source subscribers. Under the current royalty schedule, a publication drawing $300 in billable usage a month by Source subscribers would net the organization $37.50 a month; a publication drawing $1,500 a month would net an organization $262.50.

Free For The Asking

It also is possible to use computers for the purposes of research and dissemination without having to pay any fees other than your phone bill. Hundreds of "computer bulletin boards" can be used for rapid information-sharing among organizations. In Greenbelt, Maryland, for example, NASA maintains something called "GAS-NET." This bulletin board was established to support users in NASA's get-away special program (GAS), which permits researchers to send a scientific experiment aboard the Space Shuttle. The system has news about the Shuttle program, technical notes, GAS news, and a bulletin board. Persons planning experiments can communicate directly with NASA personnel, moving messages faster than the Postal Service and eliminating the hassle of "telephone tag."

Finally, there are systems that incorporate open "bulletin board" functions, private electronic mail, and serious research capabilities. These comprehensive systems illustrate just how effective small computers can be for a wide range of day-to-day research tasks. The Handicapped Educational Exchange (HEX) is a good example.

HEX was put in place and is maintained by the Amateur Radio Research and Development


NON-PROFIT GRPS! NEW ONE REGS
Federal Wed, Feb 16, 1983
10:05 EST,
From: CONTINENTAL Jot FEDERAL
Subj: NEW REGS FROM OMB
THE OFFICE OF MANAGEMENT AND BUDGET HAS
PROPOSED NEW REGULATIONS TO RESTRICT THE
POLITICAL ACTIVITIES OF NONPROFIT GROUPS
THAT RECEIVE FEDERAL FUNDS. CURRENT LAW
PROHIBITS NONPROFIT ORGANIZATIONS FROM
USING FEDERAL FUNDS FOR POLITICAL
PURPOSES BUT ALLOWS THEM TO LOBBY AS LONG
AS SEPARATE ACCOUNTS ARE KEPT. THE NEW
REGULATIONS WOULD REQUIRE COMPLETE
SEPARATION BETWEEN THE OFFICES, EQUIPMENT
AND PERSONNEL TIME USED FOR THE FEDERAL
GRANT AND RESOURCES USED FOR THE
ADVOCACY. THE PROPOSED RULES WOULD ALSO

New bulletins are posted on the HEX "bulletin board."

BEST COPY AVAILABLE

The advent of new information technologies has the potential to make the acquisition of information for all types of organizations simpler and less expensive.

Corporation (AMRAD), a nonprofit, technically oriented organization of more than 250 radio and computer amateurs. In early 1980, with funds from the Department of Education, the group put its computer information system "on line." The purpose of the system is to serve as a clearinghouse for the application of home computers to the educational needs of the handicapped. For the first few months, anyone with a microcomputer could call the system and gain access to a variety of files and a bulletin board. Eventually, the system also was made compatible with telecommunications devices for the deaf (TDDs), many of which resemble teletype machines.

AMRAD is able to provide HEX users up-to-date and relevant messages by monitoring Specialnet, a computer information system operated by the National Association of State Directors of Special Education. Specialnet entries include everything from conference announcements to proposed federal regulations published in the *Federal Register* to requests for proposals for new research and development grants. Names, addresses, telephone numbers, and contact persons are listed with entries, making the system extremely practical.

The success of HEX is proof that computers can be effective tools for grass-roots organizations. AMRAD's project provides a national constituency with a powerful research system that also has other important uses. HEX operates 24 hours a day, seven days a week, always available for those in search of information. This office never closes.

IN•FOCUS
MICROCOMPUTERS

If the pundits are on the mark, there probably is a computer in your future.

It will, most likely, be a microcomputer—a desk-top unit whose recent ancestors required entire rooms from which to work their magic. A decade ago, there were only 150,000 computers in operation across the country; that figure topped one million in 1980, and four million in 1982. According to some estimates, as many as 60 million Americans will buy home computers this decade.

At the very least, a microcomputer is a highly efficient—and increasingly affordable—tool, capable of performing functions ranging from word processing and financial planning to filing data and direct mail management. But beyond that are the functions that make the personal computer a pivotal link in the grand scheme of modern and emerging communications. Using phone lines, for example, it is possible to search data bases and retrieve information and hook up with other computer users for on-going conferences. The microcomputer also can receive and send electronic mail, reduce typesetting costs by sending copy directly to a printer's computer, and transmit text from the computer in your home to the one in your office.

At the heart of the microcomputer is a series of tiny silicon chips, laden with thousands of transistors. The real brains of the operation is the central processing unit (CPU), to which can be added various peripherals—a keyboard, printer or "joy sticks," among others. Talking to the computer—telling it what calculations to perform—is done with a keyboard similar to that of a typewriter. The machine "responds" via the printer or a display screen that may be either a special cathode ray tube (CRT) or your television. Other important peripherals are a "modem," which enables you to plug your computer into the telephone network, linking one computer to another via telephone lines, and a "disk drive." The latter allows you to save data for later retrieval on "floppy disks," which resemble small phonograph records. The CPU and all the peripherals comprise the computer "hardware." The "software," written in a special language the computer can understand, gives the machine instructions and translates your message to the CPU.

Despite its inherent ability to perform complex calculations, a computer can do nothing on its own. It will perform only those operations it is instructed to perform, and it will respond only to a "correct" series of commands. The software that gives the computer its innate "intelligence," allowing it to carry out the basic tasks expected of it, is called the system software. The applications software, meanwhile, gives the computer instructions to perform specific tasks such as word processing, updating a mailing list, balancing a checkbook, or shooting down alien invaders.

Depending on one's needs, a complete microcomputer system, capable of data storage, manipulation, and retrieval, may not be necessary. In some cases, a "dumb" terminal may suffice. These keyboard units are capable of connecting via phone lines to large computers, where the actual work is performed. It is possible, for example, for an organization to feed new mailing-list data each month into a large central computer by means of a dumb terminal and have the computer print letters periodically to a specified group of members. Or it is possible to search large centralized data bases with a dumb terminal; when the search is completed, the information may be printed out right on the terminal.

CHAPTER

6

Training & Professional Development

A few years ago, the Illinois Bankers Association discovered a new use for the telephone. The Association had only a couple of weeks to explain to its members across the state an important new banking development, making in-person meetings or seminars unfeasible. Ordinarily, print materials would be sent out to keep bankers apprised of new services, but this one, because of its complexity, undoubtedly would raise difficult questions. To make certain those questions were answered satisfactorily, the Association held a statewide audio conference, linking sites via telephone lines. Bankers gathered at more than a dozen locations, where packets of information were distributed. Teleconferencing worked so well as a training vehicle that the Association, which later merged with the Association for Modern Banking, has since done a series of telephone-delivered workshops.

Communications technology seems well suited for training and professional development. The same media used for widespread public education also can be used to reach smaller target audiences. Travel to classrooms often can be reduced or eliminated, and information can be rapidly passed on to local, or even national, groups of students.

Videotape, for example, has been used with considerable success. One of the most ambitious programs involving the use of videotape for professional training is the American Bar Association's Continuing Legal Education Videotape program—VideoLaw Seminars. In 1976, the ABA's Consortium for Professional Education, which oversees the program, released its first tapes—a six-part series on legal ethics. The series was an immediate hit both in the profession and in law schools, where the study of legal ethics was becoming mandatory. Each videotape began with a dramatization of an ethical problem acted out by professional actors and practicing attorneys. Panel discussions with experts in the field followed the drama. Students were aided by transcripts and other supporting material.

Since that first series, the Consortium has built a library of more than 300 videotapes that cover everything from law office management to witness preparation for the grand jury. Some programs are designed and scripted, then shot on location, while others are recordings of live seminars developed by various sections of the ABA. The latter usually consist of eight to 12 hours of tape edited from a two-day seminar that includes mock trials or demonstrations. Some series run as long as twelve-and-a-half hours and cost $2,000 to buy or $400 to rent. The average cost for a one-tape program, however (30 minutes to an hour), is about $150.

Another facet of the ABA's professional training effort is its video teleconference series. The American Law Institute-American Bar Association Committee on Continuing Professional Education has for years offered live continuing education seminars to the legal community. In 1981, three of the seminars were distributed live via satellite. This was followed by a 10-pro-

gram series, *1981-1982 Video Law Review*, that was distributed to downlink sites around the nation. Other avenues the ABA also is exploring for the delivery of course material include cable television and subscription TV.

Actually, cable television already has been used by a variety of nonprofit organizations for in-service training—everything from the Everett, Washington Parks Department's video course on baby-sitting to a series on individually guided education offered by the Learning Resource Center of the Danville, Illinois Public Schools. In Rockford, Illinois, 10 fire houses participated in a pilot project to teach firefighters general aspects of pre-fire planning. Basic skills instruction and simulation games were delivered via one-way and two-way cable. In Peoria, cable has been used successfully for in-service training of nursing home personnel, providing instruction in working with the aged, nutrition, and the like.

The main question on the minds of groups contemplating the use of televised training is its effectiveness. There is a growing body of research which has begun to answer that question. In Spartanburg, South Carolina, a series of experiments with interactive cable during the mid-1970s delivered live instructional classes to adults in continuing education programs. The experiments, conducted by the Rand Corporation with a grant from the National Science Foundation, tested the effectiveness of two-way interactive cable as an alternative to the traditional classroom setting for adult education.

Given carefully prepared and organized material and plenty of time for interaction with students, it appears that the medium by which the course is delivered—be it cable, microwave, or satellite— does not seem to make much difference.

Students were offered courses in mathematics, reading, and language skills through a local college in preparation for the South Carolina

Lawyers learn about juries on one of the American Bar Association's videotapes.

Communications technology seems well suited for training and professional development. The same media used for widespread public education also can be used to reach smaller target audiences.

General Education Development (GED) examinations. One group of students received classes over a cable channel in their homes, while another group took conventional classes at the college. Instructors teaching via cable stayed with their standard classroom routine, including lectures and exercises in the curriculum. Ordinarily, students could not talk with instructors, but rather communicated with simple data terminals.

The results of the experiment showed interactive cable to be a generally effective instructional medium for this level of education: "Cable students fared no worse for missing the social environment of a conventional classroom, and for some of these students home cable classes provided their only means of finishing high school."

Some educators believe that videodisc technology also holds enormous potential for training and professional development. A number of interactive videodiscs, for example, have been produced for the medical community. One series, produced by Miles Pharmaceuticals, is available for viewing in Miles Learning Centers in more than 200 hospitals across the nation. Viewers can watch an operation—in slow motion or freeze-frame, if they wish—while listening to the surgeon's commentary. Other disks, which are accompanied by written materials, cover subjects ranging from diagnostic techniques to emergency room procedures. Following the program, a quiz tests viewers' knowledge of the subject. If the viewer answers incorrectly, he is referred back to the appropriate procedure on the disk for study. If he answers correctly, the quiz moves on.

Other communication systems also have been used effectively for training. In the Augusta, Maine area, six hospitals are joined by a closed-circuit, interactive microwave system used for courses, meetings, and seminars. The network, operated by Medical Care Development with funds from the Veterans Administration, broadcasts 30 hours each week.

Although the community at large occasionally uses the facilities for classes, the system is primarily devoted to the transmission of credit and noncredit courses for medical professionals. In some respects, the rationale for the creation of the system is similar to that of the Eagle Bend School District: teaching a course like clinical pharmacology at one hospital is prohibitively expensive, but by linking six institutions for the program, thereby aggregating more students, the cost per student becomes reasonable.

In addition to courses, hospital personnel at different locations meet regularly with their peers via the system. From time to time, this closed-circuit teleconferencing concept has been expanded beyond the Augusta area. For special medical conferences, the system can become one node of a larger network—a network that has linked cities as far away as Chicago and Florence, Italy.

Other members of the medical community, in particular, have made extensive use of satellites, permitting new therapeutic techniques to be discussed—even demonstrated—by someone skilled in a certain discipline. Slides, film, and videotape have proved effective in these multi-site video conferences, which have been successful forums for the exchange of complex, highly technical information.

One consideration, however, is expense. In the mid-1970s, the American Dietetic Association, funded in part by the federal government, experimented with satellite delivery of educational material to dietitians in remote areas. The technology posed no problems, and in 1979, under the name NEWSTARS (National Educational Workshops by Satellite Television), the Association began a formal teleconferencing program. The satellite-delivered courses, beamed to groups of dietitians gathered at public television stations and hospitals two or three times a year, continued for three years, with good reaction from participants.

But in 1982 the program was called off, with no foreseeable plans to resume. "We found the costs were getting out of hand," says a spokesman for the organization. "The costs pushed us out of the market."

ADA's David Nanberg says that the organization simply couldn't afford to continue what was a popular program. The series was recorded, though, and the ADA has moved into a self-

study program with the sale of audio and videotapes. If the cost of such teleconferencing declines as much as expected in the next few years, and if organizations can find ways of supporting telecourses by charging an admission fee ("tuition") and selling related material, then the problems encountered by ADA can be overcome.

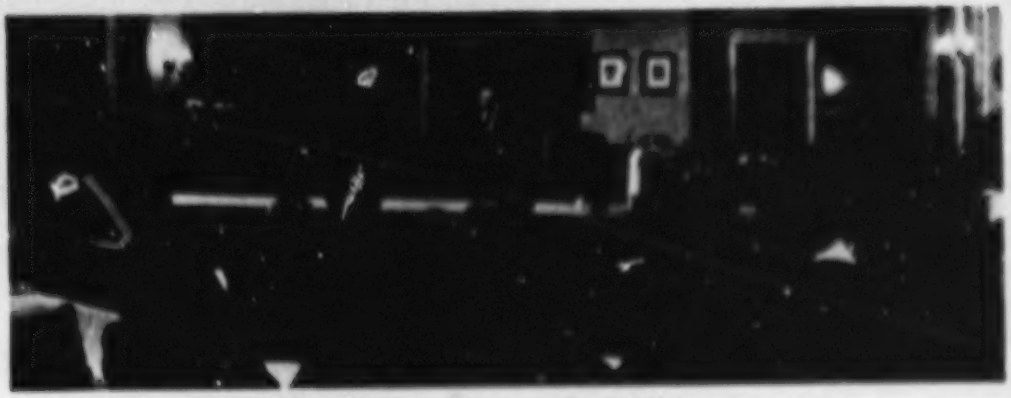
For example, in the San Francisco Bay area, the Association for Continuing Education (ACE) uses microwave transmission technology to deliver certificate and degree programs directly to corporate locations. ACE is a nonprofit organization, established in 1968, that uses the Instructional Television Fixed Services (ITFS) facilities located at Stanford University. Its members—primarily high technology firms—support the system in part (other revenues come from the sale or lease of course videotapes) and often pay the tuition charge for employees, who may "attend" classes at their job site or at the Stanford campus.

ACE is not an accredited institution, but rather works with local colleges to offer degree programs. An MBA degree in Management, for example, is offered in cooperation with Golden Gate University; certificates in business and electronics are offered in cooperation with other schools. Approximately 50 companies affiliated with ACE are equipped with TV receiving and transmitting equipment, and classes typically are held in corporate conference rooms, where students can interact with teachers via telephone hook-up.

ACE recently applied to the Federal Communications Commission for a license to operate its own ITFS system. If its application is approved, ACE plans to form partnerships with other high technology centers across the nation in hopes of developing a nationwide industrial television network. ACE General Manager Charles Davis says there is considerable interest in the idea, which would be funded and managed by corporations. Davis says such a network would use ITFS or cable TV as the local delivery system, with satellites providing the regional or national link, beaming programming to various high technology centers.

The Institute of Electrical and Electronics Engineers also has had some success in covering the costs of their telecourses. In December 1982, for example, IEEE sponsored a five-hour

Local industries are using the ITFS system at the University of Maryland's College Park campus, shown here, in a program that resembles ACE's arrangement with Stanford.



One "dowlink" site for IEEE's robotics seminar was Capitol Hill.

telecourse on the future of robotics. The course originated in the studios of South Carolina Educational Television, and was fed by satellite to 16 interactive IEEE viewing sites around the nation. In addition, ACSN-The Learning Channel made the program available to itscable television system affiliates.

For IEEE, this was a new way to offer a seminar to its members. More than 3,000 engineers, each paying $125, took the five-hour course. The 16 receive sites were connected by telephone to permit interaction between course attendees and lecturers. The teleconference was developed by IEEE as a training course for engineers, computer scientists, and others involved in the application of robotics. Cable television subscribers whose systems carry The Learning Channel also could look in on the program, even though they were not officially registered. They were not given the companion print materials, nor could they interact with the lecturers. Those at the 16 receive sites received the same professional credit for attending the telecourse as is given for other IEEE seminars.

In southern Virginia, the Center for Excellence (CenTeX) offers in-service training for teachers and other professionals using a sophisticated system that includes cable television, FM subcarriers, telephones, and ITFS. CenTeX has been on air since early 1978, offering both live and videotaped programming. Among its programs is Project GETT-UP, an in-service training program for teachers of the gifted. Lectures are delivered via ITFS to teachers, who can ask questions by telephone.

Like face-to-face instruction, telecourses are only as effective as the trainers who present them. However, given carefully prepared and organized material and plenty of time for interaction with students, it appears that the medium by which the course is delivered—be it a cable system, a microwave hook-up, or a satellite—does not seem to make much difference at all. Moreover, the advantage in added convenience and lower cost to students may well make such courses as common in the next decade as classroom training is today.

IN•FOCUS

TELECONFERENCING

When the cost of air and auto transportation rose dramatically in the late 1970s, interest in teleconferencing increased as well. Instead of actually bringing people together in one physical location for a meeting, teleconferencing permits communications among multiple participants at a number of sites. And if the thought of meeting without face-to-face contact sounds less than desirable, surveys show that the use of teleconferencing is becoming more acceptable.

Teleconferencing is not really a "technology," per se; rather it is a generic term for the interactive transmission of information among participants in multiple locations. To accomplish this, a variety of technologies—everything from telephones and microwave relays to satellites and computers—may be used. An audio teleconference, for example, brings together three or more parties through ordinary phone lines for a simultaneous group conversation. Audio conferences are generally used when visual capability is not necessary or is too costly. However, among the options that may be used to add graphics and data to an audio conference are facsimile transmission, teletyping, and slow scan video, which transmits single images every few seconds. Another option is the "electronic blackboard," which translates strokes on a pressure-sensitive surface into electronic signals, sends them over phone lines, and reconverts them on a TV monitor at the other end.

When full-motion video is required, the choice is video conferencing. Because two-way video is so expensive, the most common form of video conferencing involves video transmission from one central location via satellite. The participants at the other sites can see the major speakers and talk back by means of a phone hook-up.

The logistics of setting up a video conference are getting easier, primarily because increased numbers of satellite-receiving earth stations are being installed around the country. In many cases, as with the nation's 285 public television stations, ready-made networks are already in place. Hi-Net Communications, a subsidiary of Holiday Inns, uses the earth stations originally installed to receive first-run movie channels for video conferencing. Where permanent facilities are not already in place, though, a transportable earth station may be brought in specifically for the meeting.

Video conferencing is usually less expensive than large in-person meetings, particularly when all the related costs of transportation, food, lodging, and the like are figured in. But it certainly is not cheap. Prices will vary, depending on the company arranging the meeting. A two-hour satellite-delivered video conference linking 10 to 15 sites, with 20 to 50 people per site, would cost between $15,000 and $30,000. And an all-day transmission linking 10 Marriott Hotels, whose service is similar to that of Holiday Inns, would cost $25,000 to $50,000. If there were 500 persons at each site, however, the cost would average only $5-$10 per person. Compare that to the cost of bringing all those people together and you can begin to understand the growing popularity of teleconferencing.

Organizations are now using video conferences for a variety of purposes. Annual meetings, for example, lend themselves to video conferencing, as do training seminars, conferences, grass roots planning sessions, and even press conferences. In 1981, approximately 50 videoconferences were held in the United States. That figure is expected to rise to between 375 and 500 by 1985.

CHAPTER

7

Delivery of Services

As the deadline for 1983 tax returns approached, the Internal Revenue Service unveiled a system designed to give taxpayers a little round-the-clock comfort: "Tele-Tax," a bilingual Touch-Tone-accessed menu of audio tapes answering questions on everything from capital gains and losses to bad-debt deductions. There's even a tape that tells how to report suspected tax fraud.

In the weeks before the April 15th filing deadline, IRS staff were deluged with questions and requests for tax assistance. This left two options: either handle as many calls as possible, which was a fraction of the demand; or develop a way to deal with routine requests without tying up staff. The Tele-Tax system, by handling these routine queries, freed IRS staff to handle more complicated or specialized problems. The intended result: a significant increase in efficiency in responding to taxpayers' questions.

Operation of Tele-Tax is simple: a local phone number in each city gets a caller into the system at any time of the day or night, with a recorded message giving general directions on how it works. If a caller does not have a list of the three-digit access numbers assigned each of the 150 or so categories, a taped listing of those also can be dialed up. There is no limit to the number of tapes one can select on a single call, and tapes generally give useful information about which IRS publications offer more information.

Although the results aren't yet in on the popularity of Tele-Tax, similar systems, used for educational and community information purposes, have chalked up high marks. In Tacoma, Washington, for example, Tacoma Community College offers three for-credit courses by telephone. The system, part of the school's College By Telecommunications, was put into operation in 1977 specifically for blind students and has since evolved into a general-use delivery mechanism for course work and community information. A 24-four-hour-a-day Touch-Tone-accessed system lets students call up course tapes; those with rotary phones dial a special number and the requested tape is loaded by hand into a cassette machine. The system also has 46 other extension lines, and the access numbers for general-interest tapes—even one on first aid for horses—are printed weekly in a local newspaper.

But it isn't just the telephone that's being used in creative ways to enhance the delivery of services to the public. Ronald Magden, the Tacoma school's Media System Coordinator, says College By Telecommunications has successfully experimented with various combinations of different media to deliver course material to students, who must otherwise commute to campus. A management course, for instance, combined television and telephone access; other courses have added newspapers, radio, videotapes, and cable television—in various combinations—to the equation.

At Central Piedmont Community College in Charlotte, North Carolina, telecommunications

technologies—including a telephone call-in system—are used in about half the courses. "There is no reason why ten percent of our lectures can't be put on audio cassette and accessed through telephone lines at night," says William McIntosh, Vice President for Educational Planning. "We could save ten percent of our fuel, heat, etc."

McIntosh says the school has been involved with appropriate uses of technologies for the last decade, by resolution of the Board of Directors. He raises the possibility, for example, of allowing students to check out microcomputers from regional learning centers, or trying computer-to-computer communications over a local cable system. The DOLLY system (Dial Our Learning Listening Library), whose general-interest and course-required tapes generate about 400,000 calls per year, is just one phase of a larger program designed to address new factors affecting education. The high cost of commuting, for example, can be reduced, and conflicts between course schedules and work schedules can be easily eliminated.

The telephone also has been combined effectively with the computer in various ways for the delivery of services. A prime example is Interlink Press Service, which distributes a number of international news services, including the Rome-based Inter Press Service and London-based Earthscan, the feature service of the International Institute for Environment and Development.

Interlink, established in 1981, is, in effect, a wire service that focuses primarily on Third World news. But instead of news stories being fed to clients continuously, subscribers using small computers can search Interlink's database for stories on specific topics that may interest them.

Interlink works much the same way as the New York Times Information Bank and other commercial databases in that it allows keyword searches. An organization interested primarily in nuclear power issues, for example, could limit a particular search to stories containing the terms "nuclear waste" and "Indian Ocean," thereby narrowly defining the scope of its research.

Once stories are identified, they can be read on-screen or printed out. Anywhere from five to 15 feature articles—culled from dozens—are added to the database each week, which is accessible through a Maryland computer operation. Because access to the computer is gained by dialing a local phone number (through Telenet or Tymnet), long-distance charges are eliminated and telecommunications costs can be kept reasonably low. Interlink calculates that organizations scanning the title index daily and printing sixty articles a month would be billed approximately $75 to $100 per month in telecommunications costs.

After one interactive program on Berks Community Television explored the reasons for a raid on a local high school, the police department was so impressed with the system's potential it requested a regular time slot for a show.

The Cable Connection

Cable television likewise offers new opportunities for the delivery of services. A prime example is the Ozark Guidance Center, which runs a psychological treatment facility in Springdale, Arkansas, just north of Fayetteville. The Guidance Center is a nonprofit, private organization funded with state and federal support. Historically, it has done counseling; lately, it is doing video productions, as well, including a program on drug abuse produced by high school students at the Ozark Guidance Center. The program was carried on the local cable system by the Fayetteville Open Channel, which began providing locally produced programming to the community's 12-channel cable system in 1980.

The Center is committed to completing five video productions in total, and staff members have found the results so far not only informative, but also therapeutic. In the summer of 1982, with grant money from the state Office of Alcohol and Drug Abuse Prevention, the Center supervised production of the program on drug abuse. The work—from scripting to shooting to editing—was done by "problem" students, who had a history of expulsion from school, for example.

Larry Wayne Ellis, of the Center's staff, says the experience was particularly beneficial for the students, who now are at work on a program about school suspension and expulsion.

A split-screen shot from a Berks Community Television annual telethon.

The students, he says, are doing all the negotiations to arrange interviews, places to shoot, and the like. "It builds self-esteem for the kids to negotiate with adults," he says. "These kids took no pride in their appearance; with video, all of a sudden things changed. Video is another mirror for them."

In Reading, Pennsylvania, the focus is a bit different. What began in 1975 as a National Science Foundation project evolved three years later into Berks Community Television (BCTV), which now produces 15 hours a week of live programming on the local cable system.

What makes BCTV distinctive, though, is that it produces two-way interactive programming. One long-running show is *Inside City Hall*, which each week brings the Mayor or a member of the City Council to a downtown location for an interview. Reading citizens can participate in person at this location, or they can question the elected official from other sites equipped with TV cameras around the city. (Ordinarily, two to four sites are used for a program.) The system allows for split-screen images, so that the people addressing each other from the various sites are viewed side-by-side. Those who can't be present can watch at home and phone in questions.

BCTV can feed programming into the cable system from up to 80 sites in the Reading area, and the interactive capability has been a boon to the democratic process. City Council budget hearings have been held with the community sitting in, and the city's planning bureau received valuable input from residents during a series on historic preservation. And after one interactive program explored the reasons for a raid on the local high school, the police department was so impressed with the system's potential it requested a regular time slot for a show.

Undoubtedly, one of the best—and most often repeated—statements about the importance of BCTV, certainly from a public policy standpoint, came from Mayor Karen A. Miller: "The city has come to depend on it....If we wanted to be irresponsible public officials we could go back to the old way, being satisfied with one person showing up for a public hearing."

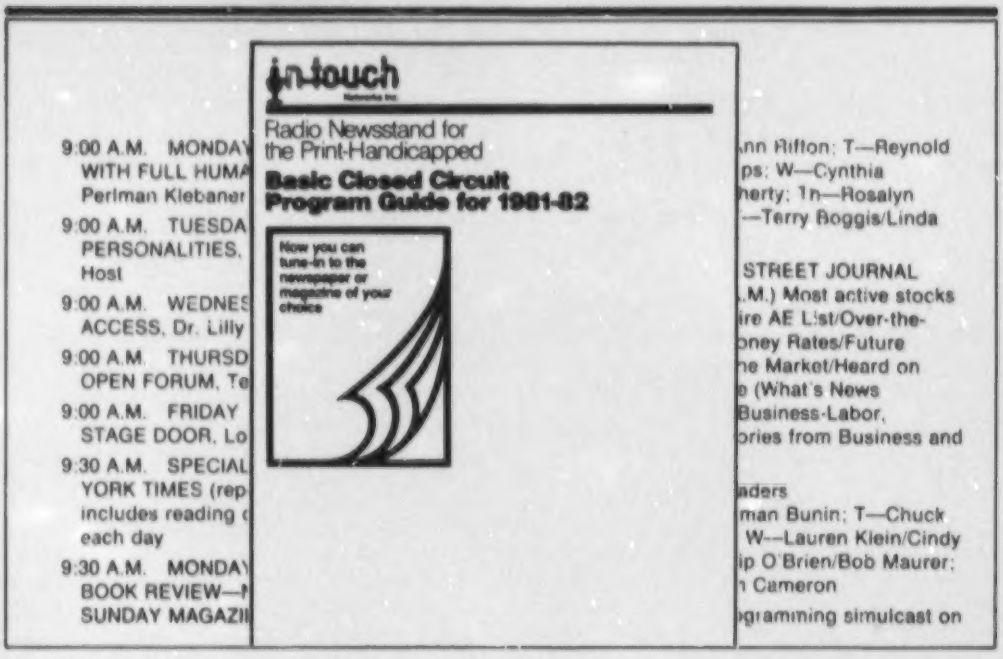
Over The Air

In the San Francisco area, the Catholic Television Network (CTN) is making creative use of Instructional Television Fixed Services (ITFS) for broadening the reach of its educational programs. CTN, a nonprofit group affiliated with the Archdiocese of San Francisco, operates Senior University of the Bay Area, a not-for-credit program that delivers educational programming via ITFS microwave to senior citizens at various neighborhood locations. CTN now has 170 sites equipped to receive its signals, including elementary and high schools, social service agencies, and church offices.

Senior University was first financed in 1978 with a grant from the Fund for the Improvement of Postsecondary Education to demonstrate that low-cost ITFS could be used for adult education at neighborhood locations. The original idea was to provide ongoing educational opportunities to those either unable to afford university courses or unable to travel to a campus. The program has, indeed, worked. According to Program Director Shirley Connolly, people have been enthusiastic about the courses, which have included such subjects as art, literature, and local history.

Radio also can be used for service delivery. Radio services for the blind have been one of the most important noncommercial uses of FM subcarriers, portions of FM radio channels not used for regular broadcasting. There are approximately 85 of these services around the country, providing news and information to those unable to read. Their signals reach only as far as the signal of the FM station on which they are carried. Programming on the subcarriers can be picked up only by people equipped with special receivers, which sell for about $75.

InTouch Networks, whose programming is broadcast on a subcarrier of Columbia University's radio station, WKCR-FM, has been offering such a reading service since April 1977. InTouch operates 24 hours a day on weekdays, and 13 hours a day on weekends, its signal



InTouch Networks' large-print/braille program guide.

stretching about 50 miles in all directions. Its 300 volunteers read everything from *People*, *Forbes*, and the *New York Review of Books*, to *Cosmopolitan*, *Playboy*, and the *National Enquirer*. In addition, Spanish- and Yiddish-language programming is being added to the lineup. The program guide is printed in large type and braille.

With limited budgets, some reading services for the blind can afford to do little more than read local and national news headlines. There is at least some trading of tapes between these services, but because most services have different needs (local newspapers, for example), not all material can be exchanged. And because much of the material to be traded is timely, the logistics can be both expensive and difficult.

Creative use of technologies, however, has made sharing arrangements a lot easier. Jasha Levi, Executive Director of InTouch, says the network is trying to use any technology available to extend the reach of the programming to unserved areas. One cable company outside the New York metropolitan area relays 35 hours of programming a week via microwave facilities to its headend for distribution to its subscribers. Another cable company in the state takes the entire schedule. And every day, New York City's WNYC-FM, a municipally-owned and operated public radio member station, distributes two hours of InTouch programming nationally by satellite.

Another service, which like FM subcarriers is delivered on an unused portion of the broadcast signal (here, the TV signal), is closed captioning. The service was developed to enable people with impaired hearing to enjoy television programming. "Captioning" is a process by which the audio portion of a television program appears as printed subtitles on the screen (similar to the subtitling used in foreign films). "Closed" captions are invisible to the general public, but can be picked up by TV sets equipped with special decoding units. A closed captioning system that uses special decoders was developed in the 1970s by the Public Broadcasting Service and the Department of Health, Education and Welfare. Currently, many public and commercial television programs are captioned, thereby making them accessible to the hearing impaired.

Although the original audience for closed captioning service traditionally has been the deaf, other uses of the system have developed, as well. One such project now is underway in Madison, Wisconsin, where WHA-TV is developing an agricultural information service that uses the same part of the TV signal that is used for closed captioning.

The staff at WHA-TV knew that the decoders

Moving from one-way information systems carried on the subcarriers of broadcast stations to sophisticated two-way electronic publishing operations requires only a short technological step. The result, however, is a great leap in the capacity and flexibility of the system.

needed for closed captioning also could be used to deliver other information of interest. Their system now has the capability to continuously monitor the Associated Press and the National Weather Service for emergency news and weather information and automatically override the regular captioning. A terminal also was installed at state government offices, allowing for the delivery of emergency or other special messages across the network.

But the decoders have even more capacity than this—they permit the reception of two channels of captioning along with two channels of text. It was decided that one text channel might be used for a public access bulletin board system, although it's all still in the planning stages.

The other text channel has been designed for those involved—even peripherally—in agriculture. The channel makes available weather reports, commodity market information, extension bulletins, and the like. In March 1983, news from the Chicago Mercantile Exchange was added.

Moving from such one-way information systems carried on the subcarriers of broadcast stations to sophisticated two-way electronic publishing operations requires only a short technological step. The result, however, is a great leap in the capacity and flexibility of the system. Videotext, as this two-way technology is called, is explained in detail at the end of Chapter Three. Suffice it to say here that any organization whose primary service involves the delivery of information to the public should keep an eye on the development of videotext, which offers tremendous potential for improving both the quantity and quality of that service.

I N • F O C U S

PERSONAL VIDEO

In the fall of 1981, an interactive videodisc about whales, geared for fifth- to ninth-graders, was released by the Nebraska Videodisc Group. The project, done for National Geographic, has multiple-choice quizzes, stereo sound of humpback whales, discrete two-channel audio that gives the separate views of environmentalists and commercial whalers, and a video magazine that parallels the popular *National Georgraphic* format.

In essence, this project is representative of the phenomenon spawned by personal video. For years, the TV screen relegated the audience to a purely passive role; now, however, it is possible for viewers to manipulate the sound and pictures, in some instances even take part in the production of the material.

Unlike film, which uses a chemical recording process, video is an electronic medium. In many ways, videotape recording resembles audio tape recording: information (in this case both pictures and sound) is recorded on a single piece of tape, passing through a magnetic field, that can be erased or recorded over.

The most widely used piece of home video equipment is the videocassette recorder (VCR), which is capable of recording off the air or, with a video camera, recording original material. There are, at present, two incompatible VCR formats or methods of recording used in low-cost "consumer" VCRs: Beta and VHS (Video Home System), both of which essentially offer the same features and recording quality. The problem is that Beta tapes can't be played on a VHS machine, and vice versa.

For years, VCRs have found favor in the industrial arena, where they are used primarily for training purposes. But those machines were generally cumbersome and expensive. In 1975, Sony introduced the first machines intended for home use, and more than five million are now in use in this country.

Contributing to the growth in sales are units that are shrinking in both size and price. Early in 1983, the pricetag of a new VCR was as low as $300, and features found on top-of-the-line models a year or two ago—fast scan, for example—are now becoming standard.

Videodisc players, introduced commercially in the United States in 1980, use platters that physically resemble phonograph records. Like the VCR, there are two incompatible formats: CED (Capacitance Electronic Disc), developed by RCA, uses a needle that runs on grooves, like a record player; and LV (LaserVision), pioneered by Philips, uses lasers to scan the disc. The CED format moves sequentially across a disc, while the LV format offers random access to all recorded material.

Perhaps the best uses for videodisc technology are found in the academic world. Because videodiscs are compact and relatively inexpensive (a consumer-oriented disc typically costs $20-$40, about half of an average videotape), videodisc libraries can be easily maintained. In addition, the enormous storage capacity (an entire encyclopedia can fit on one disc) and interactive capabilities make videodiscs an ideal teaching vehicle. There is a fairly extensive library of interactive discs, for example, designed for physicians. In one program, a doctor questions a patient about symptoms. As the patient volunteers more information, viewers can make appropriate decisions, such as selecting more detailed questions or ordering lab tests. Finally, after viewing text, still shots, or motion footage, and narrowing down suspected conditions, the viewer makes a diagnosis and orders treatment.

CHAPTER

8

Management & Administration

In 1980, officials at the George Eastman House, home of the International Museum of Photography, had a problem. For several years, they had been working on the tedious, time-consuming task of transferring records of the Museum's 600,000-image collection to a computerized access system. Cataloguing this massive archive meant poring through more than 500,000 photographic prints and 100,000 photographic negatives, representing the work of approximately 8,000 photographers. The item-by-item inventory, whose development was supported in part by a grant from the National Endowment for the Arts, would contain more information about each image than the Museum's existing records, and the computer would significantly enhance search capabilities. It was, in short, a project of particular importance.

But it just wasn't enough. Eastman House officials knew that the database would not be meaningful if the visual image was absent—a problem they obviously would face with this computerized system. The solution, they decided, lay in videodisc technology, which allows massive amounts of information—both text and images—to be recorded on platters that are played back on a special videodisc player.

When Robert Mayer took over as Director of Eastman House at the end of 1980, there had only been preliminary discussions about a videodisc cataloguing system. There seemed little doubt, however, that this was the best technological course to pursue, and a grant the following year from the New York State Council on the Arts put the project on track.

But implementation of the idea posed problems. For one thing, there was the question of how to best photograph the 600,000 images without degradation of quality. A second technical consideration involved photographing the collection in such a way that evolving videodisc technology would not one day require reshooting each image. And finally there was money.

Answers were soon found for the first two problems: it was decided that all images would be photographed on 35mm color motion picture film, giving the museum a high-resolution master record. This, it was reasoned, could be preserved and kept available for any future technological changes. A special camera was chosen for the task, and a group of images was selected for a test run.

As for the other matter, money, that called for even greater creativity. "As we began the process, we tested out the potential for raising funds for the massive project ahead," Mayer says. "Initial explorations with several major national foundations proved futile. We realized that the project had to be *demonstrated* for the importance of it to have any impact on potential funding sources. We needed to create a demonstration videodisc.

"The 150 images chosen for the test would not make a complete videodisc, and images alone would not tell the complete story," Mayer continues. "We realized that our educational chore included informing our potential audiences about the richness of our collections and

the importance of this system to people beyond the International Museum of Photography at George Eastman House. Our sample videodisc had to be a sales tool, in effect, as well as a demonstration of how the system would work."

Filming the images taught the staff the intricacies of the camera work, and the demonstration disc, recorded with music performed by a student orchestra from the Eastman School of Music, was completed in June 1982. The computer cataloguing is expected to be finished sometime in 1983, and in the meantime Mayer says the Museum's videodisc has generated considerable interest.

This experiment with computers and videodisc technology is indicative of the kinds of innovative uses of technology that can contribute to better management and more efficient administration. The computer, of course, already is acknowledged to be a valuable office tool—a fast and efficient instrument for editing and typing documents, balancing accounts, maintaining mailing lists, and storing information. But the computer isn't the only tool that's helping to streamline administrative procedures.

The New Mexico Department of Human Services, for example, found voice (audio) teleconferencing a suitable alternative to face-to-face hearings. In a typical three-day period, a hearings officer dealing with social service claims had to travel hundreds of miles between remote towns. A pilot project eliminated this costly and time-consuming travel by substituting voice teleconferencing for in-person hearings.

In Casper, Wyoming, school administrators looked to cable television to improve communication with their teachers. The superintendent of the local school district found that each week he could give an early-morning report to teachers about the previous evening's school board meeting. The televised reports reached teachers at home via the cable television system.

The use of videotape is another example. At the Labor Institute of Public Affairs, the media arm of the AFL-CIO, news is sent to state and international headquarters via a video newsletter. LIPA conducted a survey of key union offices and found a significant number already owning video equipment, having easy access to it, or preparing to purchase it. A video newsletter, it was decided, could give these offices timely and vivid information about key union issues. The first production, completed in March 1983, featured a report from the AFL's legislative director on the new Congress, moti-

In Cleveland, Tennessee, LIPA producers taped a community demonstration for the video newsletter.

vational speeches by union leaders, and details about an organizing campaign by one of the AFL's member unions.

The LIPA staff expects the tapes will run 45 minutes to an hour. As an aid to viewers, tapes begin with an index listing the location of each segment. Eventually, LIPA will publish a cross-referenced index listing the tape location of every feature.

In New York City, the Telecommunications Cooperative Network (TCN) has an ambitious telephone project in the works—one that can mean substantial monthly savings for nonprofit organizations. TCN operates on the premise that there is strength in numbers. With telecommunications services, cooperative ventures involving a large number of users can mean lower costs for everyone. Since 1980, the organization has offered its nonprofit members a bulk discount rate for long-distance telephone service that was negotiated with TDX, a competitor of AT&T.

Early in 1983, TCN was in the midst of a research project to determine the nonprofit community's knowledge about telephone service. According to Robert Loeb, TCN's Managing Director, preliminary findings indicate that roughly half of those surveyed are taking advantage of discount long-distance services like Sprint or MCI. But according to Loeb, many nonprofits fail to match their particular calling requirments with the most appropriate service. Frequent tariff or price changes and differences in transmission quality from service to service also can cost organizations more than they bargain for.

Therefore, with the aid of a microcomputer, TCN reviews available service offerings to identify the "optimal" service or services to handle each organization's unique calling requirements. By maintaining a computer profile of each group's calling patterns, this process can be repeated annually to identify new service and savings opportunities. TCN's optimization program has resulted in an average 15 percent savings for member nonprofits compared with nonmember long-distance costs.

The program also has allowed TCN to identify overlapping long-distance requirements among many of its members, enabling the coop to negotiate group purchasing agreements with vendors for bulk discount rates. "The next step," Loeb says, "is to route all member calls in a given city over our own nonprofit network using a shared telephone system such as a large PBX owned by a member university." The PBX, or telephone "switch," automatically chooses the least costly long-distance service on a call-by-call basis, and can pack special bulk lines to high volume calling areas for maximum savings. "Because of the economies of scale, no single one of our members could save as much on their own," Loeb adds.

Enter The Micro

Robert Loeb tells the following story:

The Telecommunications Cooperative Network had a meeting with a nonprofit organization that was considering buying a microcomputer. At the time of the meeting, the organization was using a time-sharing system: a small terminal in its office was connected by telephone lines to a large computer at another location. The group decided, however, that the time-sharing arrangement was not beneficial and that a stand-alone computer in its offices would be better.

The group wanted its own computer because the computer to which it was linked could not generate a printout of members' telephone numbers. This puzzled Loeb, who knew that most time-sharing systems can indeed make available data of this sort. As the discussion continued, Loeb finally learned why the organization was having trouble getting the necessary lists of phone numbers out of the computer: no one had ever put them in.

That may sound like a silly error, but it hardly is unprecedented. Many organizations mistakenly think that a computer is omniscient: plug it in and it will do any task requested of it. Other organizations wrongly expect a computer to be a panacea, capable of solving all their internal problems. Sometimes those problems have more to do with management weaknesses, personality conflicts, or budget shortfalls than mailing list maintenance and text editing.

Some consultants who have worked with nonprofit organizations say many of them don't have a firm understanding of why they need the equipment. (Nonprofits may not be alone in his regard.) Without this clear analysis, there is no real way of determining what sort of equipment is best, or whether, in fact, a computer is really needed. Those organizations that have gone into it with their eyes open, however, often have been richly rewarded.

But a computer is not a panacea. Pat Wagner, of the Denver-based Network Resources, thinks a number of hard questions should be addressed before an organization buys a computer. Among them: What is the organization's current financial situation? Who on the staff will

have the prime responsibility for supervising the computer's use? Can this person devote adequate time to this job? Can the organization afford the time to adjust to the machine and additional time before it realizes money savings or other benefits, such as increased productivity? "If an organization has financial or management problems, they make the misassumption that a computer will solve those problems," says Wagner, a computer consultant for nonprofit groups. "Somebody says, 'We're having problems, and the computer will be a wonderful tool.'"

For some organizations, she adds, microcomputers may not be appropriate. For one thing, many of the small, inexpensive computers designed primarily for home use do not have enough memory capacity for the tasks required by some organizations. In addition, putting together the right hardware and software packages is time-consuming and costly, as is computer maintenance. Among the possible pitfalls: "Your friend walks by the computer, and the static charge from his sweater erases the disk you have been sweating over for seven hours. You lose a disk behind a radiator. A power surge during a storm erases your disk. You hit the wrong button and erase the only copy of your main data entry program." And on and on.

Despite the potential pitfalls, computers now are being used efficiently in the nonprofit community for a number of purposes. Some groups have purchased their own equipment, while others are content with time-sharing arrangements. And for those who find they need to use computers occasionally, systems are available (sometimes through libraries) for a per-hour charge.

In Tucson, Arizona, for example, one commercial service charges a $30 membership fee which entitles an organization, business, or individual to 10 hours of computing time each month. An organization can maintain a database on the computer, do word processing and accounting, print form letters and address labels, or perform just about any other routine office function for which a computer is helpful.

Many libraries around the nation have begun offering similar services—typically for about one dollar an hour. This provides an easy way to get acquainted with computers and learn how to operate them without having to actually buy one. It provides a good testing ground for the types of software necessary to manage an organization. So if the budget does not allow for the immediate purchase of a computer, an organization can get a head start on the creation of files by leasing time on someone else's equipment.

In Boston, the Massachusetts Cultural Alliance makes available computing services to its members through an arrangement with the Children's Museum. The Boston Arts Computer Hookup (BACH) permits members to use a terminal in the Alliance's offices to tie into a large computer at the museum. After financial data are entered each month on the terminal, the computer produces financial reports, including year-to-date figures. Finally, the reports are printed out for the organization on the BACH terminal.

A Chicago coalition of 65 community groups, Organization Northeast (ONE), which includes block clubs, churches, tenant associations, and senior citizen organizations, is working with researchers at Northwestern University to determine how effective a tool a microcomputer can be. ONE is interested primarily in issues affecting its immediate neighborhood—housing, crime, health care, and the like—and it is looking to use its Apple II computer to document these citizen concerns for public officials.

In 1979 and 1980, for example, the community was concerned about a series of fires in Chicago. According to ONE's Bill Trierweiler, there were suspicions that some landlords were purposely allowing their buildings to become run down and then intentionally burning them for the insurance money. Four separate agencies in Chicago inspect buildings, Trierweiler says, but their lists are not cross-checked. If they were merged, he adds, some patterns involving the suspected arsons might become obvious. With the microcomputer, that data can be merged and analyzed, permitting tenants to identify buildings that may be targeted for neglect.

In San Francisco, the Regional Young Adult Program also has found computers to be a valuable asset. RYAP helps put in place social advocacy programs. A few years ago, it launched the Center for Systems Art, which was to help RYAP publish *The National Directory of Corporate Charity*. The directory was produced on a relatively inexpensive microcomputer, and after only six months of sales had just about earned back its production costs.

Any organization with a computer or terminal and telephone modem can save up to half of its typesetting costs by computer-to-computer communication with commercial typesetters. Once copy is composed, special codes are inserted—either by the organization or the typesetter—that instruct the typesetter's computer

how to format the text. Codes can be added for centering headlines, changing type sizes, special indentations, and anything else required in a brochure, newsletter, or annual report.

This booklet, *Communicating in the '80s*, was written on an $1,800 microcomputer. Drafts were printed on a $600 dot-matrix printer for editing. Codes then were inserted in the finished text, and it was sent directly to the typesetter's computers with a $150 modem. The typesetter added additional codes, and the formatted text was then sent back via phone lines to the microcomputer. In some cases, the turnaround time was only a few hours. All final editorial changes were made on this version and once again sent back to the typesetter, where the final galleys were produced. Not only were costs cut and time saved, but editorial changes were possible right up to the last moment.

One Step Further

The options made possible by microcomputers increase significantly when they are used as part of a larger network. Most nonprofit organizations tend to use microcomputers initially for "in-house" functions like word processing and mailing list maintenance. But many soon look beyond their own offices.

Some members of the Telecommunications Cooperative Network, for example, are using TCN's computer networking system for communication among regional or local offices sharing mailing lists and databases, and coordinating activities. The Council of Jewish Federations has 25 communities linked together for such purposes; the Illinois Hospital Association has hooked three of its offices into the network, as a first step in linking all of its offices together electronically; and officials of the Nuclear Weapons Freeze Campaign have begun sharing information this way.

TCN's Robert Loeb says the two biggest misconceptions about computer networking are that it costs more than most organizations can afford and that everyone must have the same equipment to have a network. A "dumb" terminal, he notes, costs no more than a good typewriter, while almost any type of equipment can be linked to a large computer where electronic messages are stored.

But just as there should be clear reasons for purchasing equipment, there also should be specific reasons for joining networks. Otherwise, initial enthusiasm about being able to communicate with other organizations is likely to evaporate quickly.

"National organizations that do a lot of mailings and have a need for greater feedback are giving computer networking greater thought," Loeb says. "People still think in terms of mailing 'packets' of information to local groups or individual constituents because, for the most part, the economics and slowness of the postal delivery system demand these types of bulk mailings. But the recipient may need only part of what's in the packet, or may need different parts at different times, and this results in much information being misplaced. Then, an organization will receive many requests for information that has already been mailed out."

Now with computer-based communication systems, Loeb adds, organizations can target specific information to different users in both a timely and inexpensive manner. Information also can be stored "on-line" for demand access by users anywhere in the country, and the national office can gain immediate feedback on how and when specific pieces of information are used, and how effective they are in the field. In this way, the system can be used to improve both the quality of the information delivered as well as the speed and efficiency of delivery.

TCN's computer communications system provides a forum for the exchange of ideas, and can be a boon to research. For one thing, organizations can make their special interest databases available to other members of the network. Or, if an organization has an extensive library on a particular topic, an information search service is possible.

There are, quite obviously, distinct advantages to owning a computer. But as was noted by Robert Loeb and Pat Wagner, there also can be drawbacks to microcomputers. Or, more accurately, poor planning can create drawbacks for organizations that don't fully analyze their needs in advance and purchase equipment to meet those needs.

But the same holds true for other technologies. As many organizations have learned, there is more to using new technologies—whether computers, satellites, or cable TV—than merely plugging them in or paying for service. To use them effectively, planning is required. Without that planning, even the most sophisticated and powerful tools can leave us no better off than we were without them.

IN•FOCUS

TELEPHONES

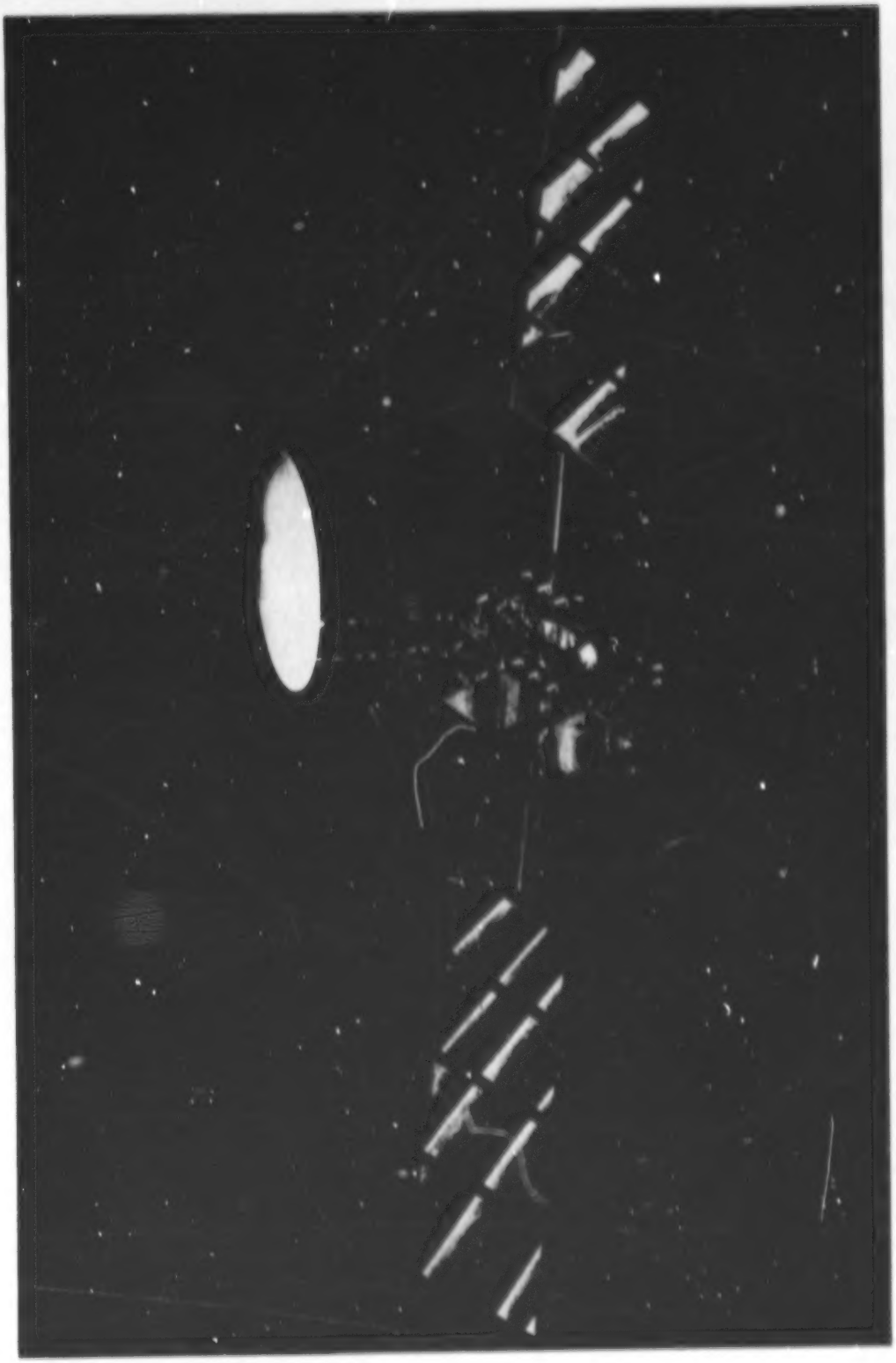
With all the discussion about innovative two-way interactive telecommunications systems, we tend to overlook our oldest and most expansive interactive network—the telephone system. A century after Alexander Graham Bell made the first phone call, 98 percent of American homes are phone-equipped, with more than 180 million phones in use; the number of companies offering discount long-distance service in competition with AT&T jumped from only two in the late 1970s to more than 200 by 1982. Only 150,000 automobiles were equipped with mobile phones at the end of 1982, but a new wireless phone service—cellular radio—is expected to push that number past three million by 1988.

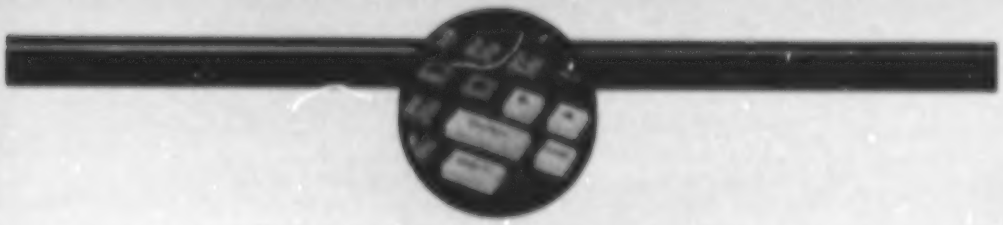
A new generation of equipment and services has transformed the plain black phone into a multi-function work station that can provide such advanced services as conference calling and storing voice messages for delivery at predetermined times. In addition, the merger of computers and telephones has set the stage for banking and shopping by phone and easy access to hundreds of data bases.

The major telecommunications story in the last decade has been the growth of competition in the telephone industry, diluting AT&T's long-held monopoly, and bringing down long-distance costs. The breakup of AT&T, which began January 1, 1983, ultimately will mean separate bills for long-distance and local service (and new rate structures for both). Owning—rather than renting—equipment will be the norm. New options in phone service have become available. MCI, for example, whose long-distance network is second only to AT&T's, will experiment with delivering phone calls to homes via cable television lines. Consumers who were once limited to dealing only with Ma Bell now have a wide range of equipment and services from which to choose. Significant savings are possible by shopping around for the best rates and services.

The phone line in your home or business is routed through a matrix of wires in your neighborhood to a local central office, where all phones in your "exchange" (represented by the first three digits of your phone number) are hooked up to electronic switches. These switches can connect one telephone to any other telephone served by the switch, and thus make local calls possible. Long distance adds another step: your call automatically goes to a local "long-distance switching office," where it is routed via cable, satellite, or microwave to a long-distance office near the phone you're trying to reach. It's then forwarded to another central office for completion.

Cellular radio, authorized by the FCC in 1982, makes possible widespread portable telephony. Unlike standard mobile phone service, cellular radio can accommodate as many simultaneous conversations from a geographical location as the regular phone system can handle. Cities are divided into small contiguous "cells" (four to 15 miles in diameter), each with its own low-powered transmitter. Adjacent cells use different channels to avoid interference. Because each of the more than 600 voice channels that will be available in each city can be used simultaneously in nonadjacent cells, the capacity of the system in tremendous. Cellular radio systems have been operating in some European countries for years, with great success. The first system in this country, a 17-cell system operated as a developmental system for several years in Chicago, is expected to late commercially operational by November 1983.





Resources

ORGANIZATIONS

General

Alternate Media Center
New York University
725 Broadway
New York, NY 10003

Center for Interactive Programs
University of Wisconsin—Extension
975 Observatory Drive
Old Radio Hall
Madison, WI 53706

Center for Learning and Telecommunications
American Association for Higher Education
One Dupont Circle
Suite 600
Washington, D.C. 20036

The Communications Consortium
Room 9-323
MIT
Cambridge, MA 02139

Federal Communications Commission
1919 M Street NW
Washington, D.C. 20554

Institute for the Future
2740 Sand Hill Road
Menlo Park, CA 94025

Public Media Center
25 Scotland Street
San Francisco, CA 94133

Telecommunications Research and Action Center
P.O. Box 12038
Washington, D.C. 20005

Teleconferencing

Academy for Educational Development
1414 22nd Street NW
Washington, D.C. 20037

ACSN-The Learning Channel
1200 New Hampshire Avenue NW
Washington, D.C. 20036

Public Service Satellite Consortium
1660 L Street NW
Suite 907
Washington, D.C. 20036

Cable

Cable Television Information Center
1800 N. Kent Street
Suite 1007
Arlington, VA 22209

National Federation of Local Cable Programmers
906 Pennsylvania Avenue SE
Washington, D.C. 20003

Computers

Atari Institute
300 East 42nd Street
New York, NY 10017

Community Affairs Program
Apple Computer
20525 Mariani Avenue
Cupertino, CA 95014

EDUCOM
P.O. Box 364
Princeton, NJ 08540

Interlink Press Service
777 United Nations Plaza
New York, NY 10017

People's Computer Company
1263 El Camino Real
P.O. Box E
Menlo Park, CA 94025

Telecommunications Cooperative Network
370 Lexington Avenue
Suite 715
New York, NY 10017

BOOKS

Aspen Institute Program on Communications and Society, *Aspen Handbook on the Media: 1977-1979*, Praeger Publishers, NY, 1977.

T. Baldwin and D.S. McVoy, *Cable Communications*, Prentice-Hall, Englewood Cliffs, NJ, 1978.

L. Blackaby, D. Georgakas, and B. Margolis, *In Focus: A Guide to Using Films*, Cine Information, Inc., N Y 1980.

D. Forbes and S. Laying, *The New Communicators: A Guide to Community Programming*, Communications Press, Washington, D.C., 1977.

M.L. Hollowell (ed.), *The Cable Broadband Communications Book: 1980-1981* (Volume 2), Communications Press, Washington, D.C., 1980.

N. Jesuale and R.L. Smith (eds.), *CTIC Cablebooks*, Cable Television Information Center, Arlington, VA 1982.

R. Johansen, J. Vallee, K. Spangler, *Electronic Meetings: Technical Alternatives and Social Choices*, Institute for the Future, Menlo Park, CA, 1979.

R.J. Lewis, *Meeting Learners' Needs Through Telecommunications: A Directory and Guide To Programs*, Center for Learning and Telecommunications, American Association for Higher Education, 1983.

The Low Power Television Guidebook, Corporation for Public Broadcasting, Washington, D.C., 1980.

Media Resource Guide, Foundation for American Communications, Los Angeles, CA, 1982.

R.M. Neustadt, *The Birth of Electronic Publishing*, Knowledge Industry Publications, Inc., White Plains, NY, 1982.

L.A. Parker and C.H. Olgren, *Teleconferencing and Interactive Media*, Center for Interactive Programs, University of Wisconsin—Extension, Madison, WI, 1980.

H. Segal and J. Berst, *How to Select Your Small Computer...Without Frustration*, Association of Computer Users Research and Education Division, 1981.

Teleguide: A Handbook for Video-Teleconference Planners, Public Service Satellite Consortium, Washington, D.C., 1981.

Telespan's Definitive Guide to Teleconferencing Products and Services, Telespan, Inc., Altadena, CA, 1983.

J. Wilson, *New Information Technologies for the Nonprofit Sector*, report of a joint conference of the Foundation Center and the Aspen Institute, 1982.

PERIODICALS

Access, Telecommunications Research and Action Center, P.O. Box 12038, Washington, D.C. 20005.

Channels of Communication, 1515 Broadway, New York, NY 10036.

Community Television Review, National Federation of Local Cable Programmers, 906 Pennsylvania Avenue SE, Washington, D.C. 20003 (community access to cable TV).

CTIC CableReports, Cable Television Information Center, 1800 N. Kent Street, Arlington, VA 22209.

CURRENT, Box 53358, Washington, D.C. 20009 (public broadcasting).

LPTV Reporter, P.O. Box 1567, Washington, D.C. 20013 (low power television).

Telescan newsletter, Center for Learning and Telecommunications, American Association for Higher Education, Washington, D.C. 20036 (higher education).

Telespan newsletter, Telespan, Inc., Altadena, CA 91001 (teleconferencing).